Appendix A1

Full-Text ScienceDirect Document
Appendix A2

ScienceDirect Abstract
Appendix B1

Source File of ScienceDirect Document before Pre-processing
Prevention of Quinone-Mediated DNA Arylation by Antioxidants
Biochemical and Biophysical Research Communications

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<b>Abstract</b>
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- **Cited By**

- **Save as Citation Alert**

- **E-mail Article**
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doiWin.focus()">doi:10.1006/bbrc.1999.1290</a>&nbsp;&n...
Prevention of Quinone-Mediated DNA Arylation by Antioxidants

Minoti Sharma and Harry K. Slocum

Department of Molecular and Cellular Biophysics, Roswell Park Cancer Institute, Buffalo, New York, 14263
Department of Pharmacology and Therapeutics, Roswell Park Cancer Institute, Buffalo, New York, 14263

Received 6 August 1999. Available online 12 April 2002.

Abstract

High performance liquid chromatographic (HPLC) analysis showed that the prototype antioxidant ascorbate (vitamin C) inhibits the DNA adducts induced by synthetic estrogen diethylstilbestrol (DES) and the antiestrogen metabolite 4-hydroxytamoxifen (4-OHTam). Treatment of salmon testes DNA with 4-OHTam quinone or 4-OHTam in the presence of horseradish peroxidase and hydrogen peroxide (H\(\textsubscript{2}\text{O}\textsubscript{2}\)) generated the same DNA adduct profile. Vitamin C and N-acetylcysteine (NAC) inhibited the formation of 4-OHTam-dG adducts in a dose-dependent manner. To determine whether the same antioxidants also protect cellular DNA, HL-60 cells were used as cell culture model. Cells treated with 10 nM 4-OHTam in the presence of 1 μM H\(\textsubscript{2}\text{O}\textsubscript{2}\) gave 4-OHTam-dG adducts ~4 × 10\(^{-7}\), N = 3. Treatment
of the cells with 100 μM 4-OHTam, without H₂O₂, produced the same level of adducts. Supplementation of the incubation media with vitamin C (2.5 mM) or NAC (5 mM) inhibited the formation of DNA adducts. Thus, antioxidants may protect susceptible cells from genotoxicity associated with 4-OHTam activation.

Abbreviations used: HPLC, high performance liquid chromatography; DES, diethylstilbestrol; 4-OHTam, 4-hydroxytamoxifen; 4-OHTam-dG, 4-hydroxy-(deoxyguanosin-N²-y1)-tamoxifen; ascorbate, vitamin C; NAC, N-acetylcysteine; H₂O₂, hydrogen peroxide; HL-60 cells, promyelocytic leukemia cells; UV, ultraviolet; IR, infrared.

To whom correspondence should be addressed at Department of Molecular &#38; Cellular Biophysics, RPCI, Elm &#38; Carlton Streets, Buffalo, New York 14263. Fax: 716-845-8899.
<table>
<thead>
<tr>
<th>Abstract</th>
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<tbody>
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<td>Actions</td>
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Cited By

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Appendix B2

ScienceDirect Document after Pre-processing
Prevention of Quinone-Mediated DNA Arylation by Antioxidants*1

Minoti Sharma, 1 and Harry K. Slocumb

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Treatment of salmon testes DNA with 4-OHTam quinone or 4-OHTam in the presence of horseradish peroxidase and hydrogen peroxide (H2O2) generated the same DNA adduct profile.

Vitamin C and N-acetylcysteine (NAC) inhibited the formation of 4-OHTam-dG adducts in a dose-dependent manner.

To determine whether the same antioxidants also protect cellular DNA, HL-60 cells were used as cell culture model.

Cells treated with 10 M 4-OHTam in the presence of 1 M H2O2 for 24 h gave 4-OHTam-dG adducts ~4 \times 10^{-7}, N = 3.

Treatment of the cells with 100 M 4-OHTam, without H2O2, produced the same level of adducts.

Supplementation of the incubation media with vitamin C (2.5 mM) or NAC (5 mM) inhibited the formation of DNA adducts.
Thus, antioxidants may protect susceptible cells from genotoxicity associated with 4-OHTam activation.

*1 Abbreviations used: HPLC, high performance liquid chromatography; DES, diethylstilbestrol; 4-OHTam, 4-hydroxytamoxifen; 4-OHTam-dG, 4-hydroxy-(deoxyguanosin-N2-yl)-tamoxifen; ascorbate, vitamin C; NAC, N-acetylcysteine; H2O2, hydrogen peroxide; HL-60 cells, promyelocytic leukemia cells; UV, ultraviolet; IR, infrared

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Fax: 716-845-8899.
Appendix C
DCG Rules for Matching Definition Patterns of Abbreviations
nea_x_abbrev_definition( entity( definition, Defn,
        Defn_list, Pattern, [], [] ) ) -->

nea_pre_def( Defn_list ),
[ '(', target( T ), ')' ],
{ nea_insert_spaces_in_list( Defn_list, Defn),
  Pattern = [ '60abbrev', '(', target( T ), ')' ] }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* DEF ( TERM ) */

nea_x_abbrev_definition( entity( definition, Defn,
        _Defn_list, _Pattern, [], [] ) ) -->

[ target( _ ), '{' ],
nea_pre_parent( Defn_list2 ),
{ nea_parent_stopwords( Word ),
  nea_check_parent_content( Word, Defn_list2),
  Defn = [ 'NIL' ] }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM ( DEF ), DEF includes stopwords such as 'et al' and figure */

nea_x_abbrev_definition( entity( definition, Defn,
        _Defn_list, _Pattern, [], [] ) ) -->

[ target( _ ), ',', '(' ],
nea_pre_parent( Defn_list2 ),
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  nea_check_parent_content( Word, Defn_list2),
  Defn = [ 'NIL' ] }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM, ( DEF ), DEF includes stopwords such as 'et al' and figure */

nea_x_abbrev_definition( entity( definition, Defn,
        _Defn_list, _Pattern, [], [] ) ) -->

[ target( _ ), '{' ],
nea_pre_parent( Defn_list2 ),
{ nea_parent_stopwords( Word ),
  nea_check_parent_content( Word, Defn_list2),
  Defn = [ 'NIL' ] }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM, ( DEF ), DEF includes stopwords such as 'et al' and figure */
nea_pre_parent( Defn_list2 ),
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  Defn = [ 'NIL' ], }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM ( DEF ), DEF includes year numbers such as 1999 */
nea_x_abbrev_definition( entity( definition, Defn,
    _Defn_list, _Pattern, [], [] ) ) -->

[ target( _ ), ',' ],
nea_pre_parent( Defn_list2 ),
{  nea_check_parent_year_content( Defn_list2),
  Defn = [ 'NIL' ], }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM ( DEF ), DEF includes year numbers such as 1999 */
nea_x_abbrev_definition( entity( definition, Defn,
    _Defn_list, _Pattern, [], [] ) ) -->

[ target( _ ), '(' ],
nea_pre_parent( Defn_list2 ),
{  nea_check_authors( Defn_list2),
  Defn = [ 'NIL' ], }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM ( DEF ), DEF includes authors such as Beck and Beck */
nea_x_abbrev_definition( entity( definition, Defn,
    _Defn_list, _Pattern, [], [] ) ) -->

[ target( _ ), ',' ],
nea_pre_parent( Defn_list2 ),
{  nea_check_authors( Defn_list2),
Defn = [ 'NIL' ], !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM, ( DEF ), DEF includes authors such as Beck and Beck */
nea_x_abbrev_definition( entity( definition, Defn,
    Defn_list, Pattern, [], [] ) ) -->

[ target( T ), '{' ],
ea_pre_parent( Defn_list ),
{ nea_insert_spaces_in_list( Defn_list, Defn),
  Pattern = [ '38abbrev', target( T ),
  [ '{' ], Defn_list, [ '}' ] ] }, !.

/* Following convention, Defn has spaces between the words while
Defn_list (for matching not writing out) does not. */
/* TERM ( DEF ) */
nea_x_abbrev_definition( entity( definition, Defn,
    Defn_list, Pattern, [], [] ) ) -->

[ target( T ), ',', '{' ],
ea_pre_parent( Defn_list ),
{ nea_insert_spaces_in_list( Defn_list, Defn),
  Pattern = [ '38babbrev', target( T ),
  [ '{' ], Defn_list, [ '}' ] ] }, !.
Appendix D

Final Output of the System
Explanation for the first answer (first two lines): ‘4123’ is the query number, the first ‘1’ is the doc_so_far_term_count, the second ‘1’ is the doc_total_term_count, ‘N. pemaquidensis’ is the answer, 62a is the pattern number, followed by the lexical pattern (‘is considered a’) and the query term (target) ‘facultative’.

4123 1 1 N . pemaquidensis
[62a,[is],considered,[a],target([facultative])]

4137 2 7 Site X displayed consistently higher TPM, PIM, POM and nonalgal POM concentrations than the mussel sites,
[56a,including,[the],target([fallowing])]

4137 1 1 The best way to avoid the development of resistance is to use as little chemicals as possible by applying nonchemical control methods [52,such,as,target([fallowing])]

4137 3 3 IHN virus , [47,target([fallowing]),[],[IHN,virus,]]
4137 1 2 single year classes ,
[47,target([fallowing]),[],[single,year,classes,]]

4146 3 27 involved 628 individuals .
[47,target([family]),[],[involved,628,individuals,]]

4146 1 8 in a clade containing fish AhR2 genes .
[47,target([family]),[],[in,a,clade,containing,fish,AhR2,genes,]]

4146 2 4 C / EBP , [47,target([family]),[],[C,,EBP,]]

4146 1 1 have not been examined in teleosts .
[47,target([family]),[],[have,not,been,examined,in,teleosts,]]

4146 3 4 mammalian and chicken mannose - binding lectins , conglutinin and surfactant proteins A and D [11].
[25,target([family]),[includes],[mammalian,and,chicken,mannose,,-,binding,lectins,,,conglutinin,and,surfactant,proteins,A,and,D,[11],]]

4146 2 4 including GH , [47,target([family]),[],[including,GH,]]

4146 3 4 the pituitary form of GH (hGH - N ) , as well as chorionic somatotropin (hCS) , a hCS variant (hCS - L ) , and a GH variant (hGH - V ) which are expressed in placenta (Miller and Chen).
[25,target([family]),[includes],[the,pituitary,form,of,GH,(hGH,-,N),,,as,well,as,chorionic,somatotropin,(hCS),,,,a,hCS,variant,(hCS,-,L),,,and,a,GH,variant,(hGH,-,V),,which,are,expressed,in,placenta,(Miller,and,Chen),]]

4146 1 1 regulation of GST and the contribution of the isoenzymes to cancer chemoprotection and drug resistance.
[45,target([family]),[],[regulation,of,GST,and,the,contribution,of,the,isoenzymes,to,cancer,chemoprotection,and,drug,resistance,]]

4146 1 3 FSH - , LH - or TSH - receptor
[38,target([family]),[],[FSH,-,,LH,-,or,TSH,-,receptor,]]

4146 1 1 responsible for sensitivity of Listeria monocytogenes to mesentericin Y105.
[9aa,target([family]),[is],[responsible,for,sensitivity,of,Listeria,monocytogenes,to,mesentericin,Y105,]]

4146 1 3 have a life cycle consisting of the following stages : two nauplius,
[47,target([family]),[],[have,a,life,cycle,consisting,of,the,folowing,stages,:,two,nauplius,]]

4146 1 1 visual predators (Gaston and Jones, 1998).
[9ab,target([family]),[are],[visual,predators,(Gaston,and,Jones,,,1998,)]

4146 2 5 conserved between various vertebrate species , and proteins similar to LTBPs and fibrillins have been identified even in as distant a species as jelly fish (Saharinen et al., 1999).
[9aa,target([family]),[is],[conserved,between,various,vertebrate,species,,and,proteins,similar,to,LTBPs,and,fibrillins,have,been,identified]
even, in, as, distant, a, species, as, jellyfish, (Saharinen et al., 1999).

ploidy, [47, target([family]), [], [ploidy,]]

present in vertebrates, as well as in some invertebrate species.

[9ab, target([family]), are, [present, in, vertebrates, as, well, as, in, some, invertebrate, species,]]

related to each other by structure and believed to have evolved from a common ancestral gene by duplication and subsequent divergence (reviewed by Rand-Weaver and Kawauchi, [10b, target([family]), which, are, [related, to, each, other, by, structure, and, believed, to, have, evolved, from, a, common, ancestral, gene, by, duplication, and, subsequent, divergence, (reviewed, by, Rand, -

Weaver, and, Kawauchi,)]]

Cyprinidae [38, target([family]), [], [Cyprinidae,]]

denoted by a common symbol.

[9ab, target([family]), are, [denoted, by, a, common, symbol,]]

90 - kDa protein (HSP90) is highly conserved and abundant in unstressed cells, [34, target([family]), [], [the,]], [90, kDa, protein, (HSP90), is, highly, conserved, and, abundant, in, unstressed, cells,]]

W272 and NCA, [47, target([family]), [], [W272, and, NCA,]]

testicular alternative splicing variant hPL - A2: recombinant expression revealed a membrane associated growth factor molecule.

[34, target([family]), [], [testicular, alternative, splicing, variant, hPL, -

A2, ; recombinant, expression, revealed, a, membrane, associated, growth, factor, molecule,]]

an icosahedric capsid without envelope.

[10c, target([family]), which, has, [an, icosahedric, capsid, without, envelope,]]

three subfamilies: Salmoninae (trout, salmon, char), Coregoninae (whitefish) and Thymallinae (greyling).

[23, target([family]), comprises, [three, subfamilies, ;, Salmoninae, (, trout, , salmon, , char, ),,, Coregoninae, (, whitefish,), and, Thymallinae, (, greyling,),]]

than of growth hormone in teleost fish.

[47, target([family]), [], [than, of, growth, hormone, in, teleost, fish,]]

main signaling pathway is via adenylyl cyclase (Poyner and Aiyar).

[34, target([family]), [], [main, signaling, pathway, is, via, adenylyl, cyclase, (, Poyner, and, Aiyar,),]]

having in common a six amino acid ring structure at the NH2 terminus of the molecule (created by a disulfide bond between two cysteines at positions 2 and 7) and an amide group at the COOH terminus.

[47, target([family]), [], [having, in, common, a, six, amino, acid, ring, structure, at, the, NH2, terminus, of, the, molecule, (, created, by, a, disulfide, bond, between, two, cysteines, at, positions, 2, and, 7,), and, an, amide, group, at, the, COOH, terminus,]]

more common than n - 3 fatty acids.

[9ab, target([family]), are, [more, common, than, n, -, 3, fatty, acids,]]

activates G proteins (Gq and G11) that stimulate phospholipase C activity to generate inositol trisphosphate and diacylglycerol.

[47, target([family]), [], [activates, G, proteins, (, Gq, and, G11,), that, stimulate, phospholipase, C, activity, to, generate, inositol, trisphosphate, and, diacylglycerol,]]
CCAAT / enhancer binding proteins (C/EBPs) comprise a family widely studied in mammalian systems.

MyoD, myogenin, myf5 and MRF4.

F = 5.14, P = 0.003

Likely to result in an even more pronounced reduction in genetic variability as evidenced in the Norwegian farmed II population.


Histamine derivative, gizzerosine (GE = 2-amino-9-(4-imidazolyl)-7-azanonanoic acid) is formed by a reaction between the amino group of lysine with the imidazolethyl group of histidine or histamine (Okazaki et al., 1983).

Salmon, tuna, mackerel, mainly terrestrial insects, seawater temperature at Paleo Kushiro Bay was about 5 degrees C warmer than at present.

Evidence for atmospheric delivery.

The environment in general, can the society accept? The quality of this controversy is not one that can be resolved by increased research or improved technology.

Biomass losses due to spawning.
Appendix E

Vital and Okay Answers

(First Experiment)
<table>
<thead>
<tr>
<th>Term</th>
<th>Judgement</th>
<th>Pattern</th>
<th>Text extract (relevant definition in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>artificial photoperiod</td>
<td>Okay</td>
<td>TERM is DEF</td>
<td>Capable of altering the timing of maturation</td>
</tr>
<tr>
<td>Chinook salmon</td>
<td>Okay</td>
<td>TERM (DEF)</td>
<td><em>Oncorhynchus tshawytscha</em> in the Pacific Northwest</td>
</tr>
<tr>
<td>Chinook salmon</td>
<td>Okay</td>
<td>TERM constitutes DEF</td>
<td>Roughly 30% of the total British Columbia production</td>
</tr>
<tr>
<td>parr</td>
<td>Okay</td>
<td>TERM are DEF</td>
<td>Commonly reared in freshwater on diets containing northern hemisphere fish oils</td>
</tr>
<tr>
<td>parr</td>
<td>Okay</td>
<td>DEF (TERM)</td>
<td>Studies conducted in laboratory streams have shown that <em>juvenile salmonid fish</em></td>
</tr>
<tr>
<td>redd</td>
<td>Vital</td>
<td>TERM (DEF)</td>
<td>Jacks spawn in the female’s nest</td>
</tr>
<tr>
<td>redd</td>
<td>Okay</td>
<td>DEF called a TERM</td>
<td>The researcher cannot be certain that a particular location in a stream is suitable until spawning has taken place there, leaving feature in the stream bed</td>
</tr>
<tr>
<td>alevin</td>
<td>Okay</td>
<td>DEF (TERM)</td>
<td>The hatched Atlantic salmon</td>
</tr>
<tr>
<td>alevin</td>
<td>Okay</td>
<td>TERM (DEF)</td>
<td><em>under 2 cm in length</em> were collected every other day for 20 days</td>
</tr>
<tr>
<td>smolt</td>
<td>Okay</td>
<td>Term (DEF)</td>
<td>4810 degrees days</td>
</tr>
<tr>
<td>smolt</td>
<td>Vital</td>
<td>DEF is termed TERM</td>
<td>Anadromous salmonids migrate from rivers to marine habitats as a developmental stage</td>
</tr>
<tr>
<td>smolt</td>
<td>Vital</td>
<td>TERM is DEF</td>
<td>usually defined as a juvenile salmon that is able to survive and grow normally in seawater (Sigholt, 1997)</td>
</tr>
<tr>
<td>grilse</td>
<td>Okay</td>
<td>DEF (TERM)</td>
<td>Positional and temporal variations in swimming speed and some morphological attributes were assessed in various mixed populations of early maturing i.e., as 2-year-olds after one winter of seawater residence, whereas their Nova Scotian relatives are recognised…</td>
</tr>
<tr>
<td>grilse</td>
<td>Vital</td>
<td>TERM (DEF)</td>
<td>i.e., as 2-year-olds after one winter of seawater residence, whereas their Nova Scotian relatives are recognised…</td>
</tr>
<tr>
<td>osmoregulation</td>
<td>Okay</td>
<td>DEF including TERM</td>
<td>The stress-induced elevation of cortisol is thought to be important in the physiological adjustments to stress</td>
</tr>
<tr>
<td>fry</td>
<td>Okay</td>
<td>TERM which is DEF</td>
<td>a phase in the life cycle characterised by a very high growth rate (Austreng, 1987)</td>
</tr>
<tr>
<td>astaxanthin</td>
<td>Vital</td>
<td>TERM is DEF</td>
<td>An approved color additive in the feed of salmonids</td>
</tr>
<tr>
<td>astaxanthin</td>
<td>Okay</td>
<td>DEF such as TERM</td>
<td>In addition to the (n-3) HUFAs, marine fish larvae also require ascorbic acid, tocopherol and carotenoids</td>
</tr>
</tbody>
</table>
Appendix F

Query Terms for which Answers were Found
(Second Experiment)
adipose fin
abbreviate heterocercal
abdomen
abdominal
abdominal cavity
abdominal fins
aberrant
aberration
abiotic
absorption
accession
acclimation
acidity
acoustic tag
active metabolism
acute toxicity
ad libitum
adipose
adsorption
adult
advance
aeration
affinis
agar
age at first maturity
age structure
aggregate
aggregation
alcohol
alevin
algae
algorithm
alimentary canal
alkalinity
allele
allèlé
allometry
allozyme
alta
altitude
ambient temperature
amino acids
ammocoetes
amphibians
amphipods
anadromous
analogous
angel
angling
annular
annul
anonymous
anoxia
anteri
anthropogenic
antibiotics
anus
application
approximation
aquaculture
aquaculture Center
aquifer
arrow
article
articular
artificial selection
ascidians
asia
assimilation efficiency
association
asteriscus
atlas
atresia
attribute
australian salmon
axial
axial skeleton
dam
data
database
dataset
debris
declaration
decomposition
deep sea
deep water
definition
degenerate
deletions
demersal
demographic
density
deoxyribonucleic acid
depensation
depensatory
depressed
depression
depth
derived
dermal
dermal bone
dermis
dermocranium
description
designation
detritus
diarrhea
diatoms
diencephalon
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disc
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disturbance
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divergence
diversity
division
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<td>maximum economic yield</td>
<td>mucus</td>
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<td>innate</td>
<td>maximum sustainable yield</td>
<td>myotome</td>
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<td>medial</td>
<td>mysis</td>
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<td>myotome</td>
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<td>Median effective concentration</td>
<td>race</td>
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<td>median fins</td>
<td>raceway</td>
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<td>Tppedicated feed</td>
<td>rada</td>
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<td>medulla oblongata</td>
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Appendix G
Vital and Okay Answers
(Second Experiment)
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<th>Term</th>
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<tr>
<td>adult</td>
<td>Okay</td>
<td>DEF such as a/an/the</td>
<td>The term recruits can apply to any stage in the life cycle</td>
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<tr>
<td>alcohol</td>
<td>Okay</td>
<td>TERM, DEF</td>
<td>Isopropanol</td>
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<td>alcohol</td>
<td>Okay</td>
<td>TERM (DEF)</td>
<td>EtOH</td>
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<tr>
<td>amino acids</td>
<td>Okay</td>
<td>TERM were DEF</td>
<td>predicted to constitute the signal peptide</td>
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<tr>
<td>amphipods</td>
<td>Okay</td>
<td>DEF, TERM,</td>
<td>Tadokoro, Ishida, Davis, Ueyanagi, and Sugimoto (1996) reported that chum salmon shifted their diets from predominantly gelatinous zooplankton (pteropods, appendicularians, jellyfish, chaetognaths, polychaetes and unidentified material) in 1991, when pink salmon were abundant, to a diet composed more of crustaceans (euphausids, copepods)</td>
</tr>
<tr>
<td>amphipods</td>
<td>Okay</td>
<td>DEF such as TERM</td>
<td>Each of these top predators is directly or indirectly dependent on food web based on crustaceans</td>
</tr>
<tr>
<td>anadromous</td>
<td>Vital</td>
<td>TERM--DEF</td>
<td>That is they spawn in freshwater and, a few weeks to a few years after hatching, the young migrate to the ocean, where they spend from one to several years (Groot and Meehan and Bjornn, 1991).</td>
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<tr>
<td>antibiotics</td>
<td>Okay</td>
<td>TERM, DEF</td>
<td>Such as oxytetracycline (OTC)</td>
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<tr>
<td>antibiotics</td>
<td>Okay</td>
<td>TERM are DEF</td>
<td>Registered and sold for use in the United States as feed additives for disease control in farmed fish.</td>
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<tr>
<td>aquaculture</td>
<td>Okay</td>
<td>TERM, DEF</td>
<td>Growing fish in captivity</td>
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<tr>
<td>Australian salmon</td>
<td>Vital</td>
<td>TERM (DEF)</td>
<td>Arripidae: Arripis truttacea, Cuvier</td>
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<tr>
<td>sib selection</td>
<td>Vital</td>
<td>DEF (TERM)</td>
<td>An alternate strategy would be to rear a portion of each family under production condition and select broodstock families on the basis of the production performance of their sibs</td>
</tr>
<tr>
<td>smoltification</td>
<td>Vital</td>
<td>TERM--DEF</td>
<td>The transformation from freshwater dwelling parr to saltwater tolerant smolt</td>
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<tr>
<td>snappers</td>
<td>Vital</td>
<td>TERM (DEF)</td>
<td>Subfamily Lutjaninae</td>
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<td>soft water</td>
<td>Okay</td>
<td>TERM (DEF)</td>
<td>100 mg CaCO3/l</td>
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<tr>
<td>intestine</td>
<td>Vital</td>
<td>TERM, DEF</td>
<td>Defined as the section from the ileorectal valve to the anus</td>
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<td>intestine</td>
<td>Okay</td>
<td>TERM is DEF</td>
<td>the main target organ of dietary metals (Handy 1992)</td>
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<tr>
<td>Term</td>
<td>Judgement</td>
<td>Pattern</td>
<td>Text extract (relevant definition in bold)</td>
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<td>-----------</td>
<td>---------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
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<td>intestine</td>
<td>Okay</td>
<td>TERM is DEF</td>
<td>One of the major osmoregulatory organs in fish</td>
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<td>iteroparous</td>
<td>Vital</td>
<td>TERM, DEF</td>
<td>potentially spawning multiple times</td>
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<td>maturation</td>
<td>Okay</td>
<td>TERM (DEF)</td>
<td>grilsing</td>
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<td>maturity</td>
<td>Okay</td>
<td>TERM, i.e. DEF</td>
<td>the presence of running milt</td>
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<td>salmonids</td>
<td>Okay</td>
<td>TERM: DEF</td>
<td>Rainbow trout, Atlantic salmon and coho salmon</td>
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<td>salting</td>
<td>Vital</td>
<td>TERM is DEF</td>
<td>An ancient preservation method, usually used separately or in combination with other process such as air drying and pH lowering</td>
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<td>salting</td>
<td>Okay</td>
<td>DEF, TERM,</td>
<td>The traditional cold-smoked salmon process involves the use of a number of preserving technologies, including cooling,</td>
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<td>seine</td>
<td>Okay</td>
<td>DEF consists of a/an/the TERM</td>
<td>A net-pen</td>
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<td>semelparous</td>
<td>Vital</td>
<td>TERM (DEF)</td>
<td>i.e., they reproduce once and die soon after spawning</td>
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<td>Specific growth rate</td>
<td>Okay</td>
<td>TERM (DEF)</td>
<td>SGR</td>
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<td>Specific growth rate</td>
<td>Okay</td>
<td>TERM was DEF</td>
<td>Calculated as (ln W2 – ln W1 ) / T1 – 2, where T1 – 2 is the number of days between times T1 and T2</td>
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<td>stationary</td>
<td>Okay</td>
<td>TERM, DEF</td>
<td>Maintaining position with a steady tail beat</td>
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<td>stock enhancement</td>
<td>Okay</td>
<td>TERM is DEF</td>
<td>required to sustain catches, for example for restoration and mitigation, or where angling expectation exceeds the capacity for the prevailing conditions to provide</td>
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<td>sturgeons</td>
<td>Vital</td>
<td>TERM ( DEF)</td>
<td>Acipenseridae, 26 species</td>
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Appendix H
Query Terms for which Answers were Found
(Third Experiment)
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<td>gel</td>
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<td>Flake</td>
<td>gen</td>
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<td>Floater</td>
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<td>Gill rakers</td>
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guanine
gubbins
guild
gut
gutted fish
gyre
pancreas
parallelism
parameter
parasite
parasitic
parr
parsimony
parts per thousand
Passive Integrated Transponder tags
pathogen
pectoral fins
peduncle
pelagic
pellet
pelvic fins
pen
peripheral
persistence
personal communication
pH
pharynx
phenotype
phenotypic plasticity
pheromone
phi
philopatry
photoperiod
photosynthesis
phylogeny
phytoplankton
pigmentation
Pikes
pineal organ
piscator
Pisces
piscine
piscivorous
plain
planktivorous
plankton
plankton bloom
planktonivorous
plants
plate
plumbeus
poikilotherm
polarisation
polarity
pollution
poly-
polychaetes
polyculture
polymorphic
polymorphic loci
polymorphism
polyunsaturated fatty acids
Pomfrets
pond
pond culture
pool
population
population dynamics
pore
porpoises
port
post-
posterior
postlarvae
pot
pre
precautionary principle
precision
precocious
predator
predatory
prediction
primary production
primary productivity
priority
Probability distribution
process
processing
produced
productivity
profile
projection
pronemos
proportion
prospecting
protected area
protozoans
province
proximal
publication
published work
pungent
purse seine
pyloric caeca
pyloric caecum
pylorus
year class
year-class
yearling
yield
Appendix I

Vital and Okay Answers

(Third Experiment)
<table>
<thead>
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<th>Term</th>
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<td>FAO</td>
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<td>The United Nations Food and Agriculture Organization</td>
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<td>feed conversion</td>
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<td>TERM (DEF)</td>
<td>wet weight gain by fish/ dry weight of feed consumed</td>
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<td>efficiency</td>
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<td>fish meal</td>
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<td>TERM, the DEF</td>
<td>major source of protein in commercial diets of salmonids</td>
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<td>FishBase</td>
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<td>TERM, a DEF</td>
<td>Large database on the biology of fish (Froese and Pauly)</td>
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<td>flasher</td>
<td>Vital</td>
<td>TERM (DEF)</td>
<td>approximately 36 in. silver lure</td>
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<td>freshwater eels</td>
<td>Vital</td>
<td>TERM (DEF)</td>
<td>Anguillidae</td>
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<td>fugu</td>
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<td>TERM (DEF)</td>
<td>Puffer fish</td>
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<td>genetics</td>
<td>Okay</td>
<td>DEF such as TERM</td>
<td>The genetically identical nature of cloned fish is also important for basic biological sciences</td>
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Appendix J

Vital and Okay Answers

(Fourth Experiment)
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<td>algae</td>
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<td>DEF including TERM</td>
<td>Epibiotic microorganisms</td>
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<td>caciques</td>
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<td>TERM (DEF)</td>
<td>Icterinae: Cacicus cela</td>
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<td>Cartilaginous fishes</td>
<td>Okay</td>
<td>DEF (TERM)</td>
<td>Since the appearance of vertebrates with true jaws in the Silurian period (438–408 mya), the gnathosome vertebrates have undergone three major radiations: the Chondrichtyes</td>
</tr>
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<td>caviar</td>
<td>Okay</td>
<td>DEF ([Words], TERM, _)</td>
<td>The prevalence of L. monocytogenes in cured seafood</td>
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<tr>
<td>newts</td>
<td>Okay</td>
<td>TERM (DEF)</td>
<td>Amphibia</td>
</tr>
<tr>
<td>amphipods</td>
<td>Okay</td>
<td>DEF such as TERM</td>
<td>Each of these top predators is directly or indirectly dependent on food web based on crustaceans</td>
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<tr>
<td>lapillus</td>
<td>Vital</td>
<td>DEF called a/an/the TERM</td>
<td>The inner ear of teleost fish consists of three semicircular canals and three otolithic organs, the utriculus, sacculus and lagena, each containing a single otolith</td>
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<tr>
<td>Length-weight relationship</td>
<td>Okay</td>
<td>DEF (TERM)</td>
<td>Condition factor</td>
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<td>lethargy</td>
<td>Okay</td>
<td>DEF including [Words], TERM</td>
<td>The pyrithiamine-injections induced several M74-like symptoms</td>
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<tr>
<td>luciferase</td>
<td>Okay</td>
<td>DEF (TERM)</td>
<td>Recombinant stbTSHR expressed in COS1 cells activated reporter genes</td>
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<tr>
<td>adipose</td>
<td>Okay</td>
<td>DEF (TERM)</td>
<td>fat</td>
</tr>
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