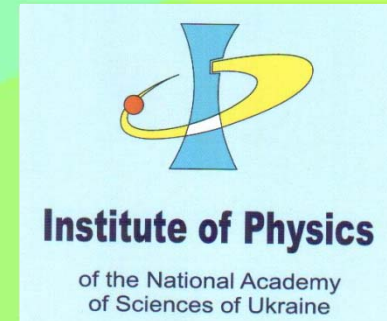


Brokerage Event

Food Security | Sustainable Agriculture and Forestry |
Marine, Maritime and Inland Water Research |
Bioeconomy | KET-Biotechnology |
Brussels 28th June 2016



BioHorizon



Session 2: Blue Growth + KET Biotechnology

Overcoming the Vitamin D deficiency

Irina Terenetskaya

Institute of Physics

National Academy of Sciences of Ukraine



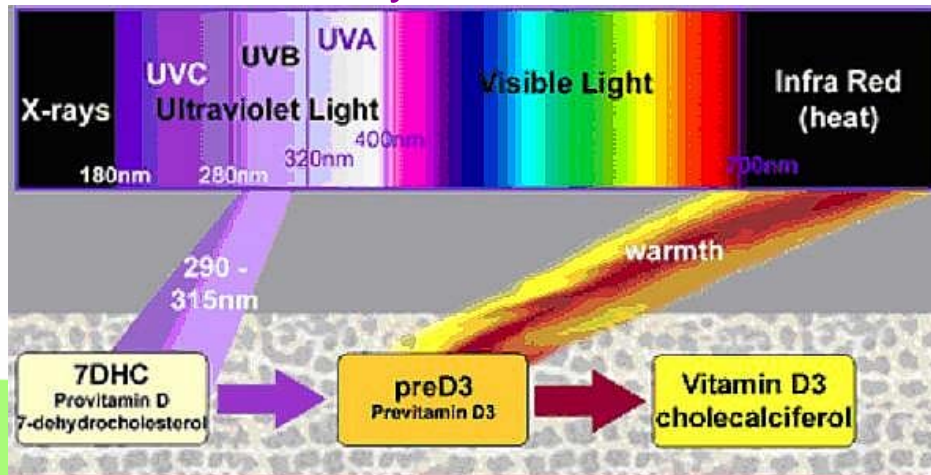
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BioHorizon project is funded by the European Commission - Grant Agreement no. 652637

PROBLEM

Epidemiologic studies indicate **high incidence of vitamin D deficiency** in almost all populations in the world

Vitamin D synthesis in skin



VITAMIN D DEFICIENCY RELATED DISEASES

<p>Cancer</p> <p>.....</p> <p>Prostate, breast, colon cancer (prevention) Leukemia(s) (treatment)</p>	<p>Impaired glucose tolerance and type-II diabetes</p>
<p>Rickets, Osteomalacia, Osteoporosis</p>	<p>High renin hypertension, increased cardiovascular risk factor, increased thrombogenesis</p>
<p>Increased prevalence of infection e.g. tuberculosis</p> <p>.....</p> <p>Increased autoimmune diseases; e.g. type 1 diabetes, multiple sclerosis, inflammatory bowel disease, psoriasis</p>	<p>Muscle myopathy; increased falls</p>
	<p>Vitamin D deficiency <i>in utero</i> alters adult behavior</p>

Further Information
Exp. Biol. Med. 235:1034-1045 (2010)
Amer. J. Clin. Nutrition 88:491S-499S (2008)



In situ monitoring of the Vitamin-D Synthetic Capacity of Sunlight using Bio-equivalent Ultraviolet Dosimeter

Previous Projects

1996-1998 DG XII/CEC Project “BIODOS”

2002-2005 STCU Project Gr-50(j),
Collaborator - NOAA/ARL, USA

2007-2010 STCU Project P344, Partner –
LLNL, USA

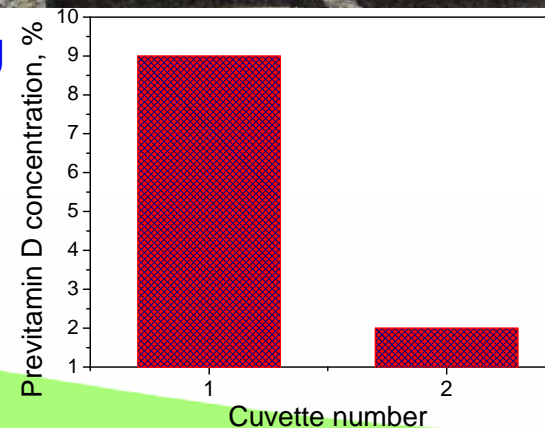
(2nd Call “BLACK SEA BASIN 2007-2013”)

Unrealized project ‘AQUAVITAD’

Title: Novel Technology for Assessing
Risks of Oil-Spills Pollution by
Monitoring the Capacity of vitamin D
synthesis in aquatic ecosystems

About 100 Publications, 4 Patents

**Water pollution by oil spills
inhibits vitamin D synthesis !**



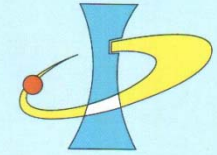
Original UV bio-
dosimeter is based
on the same photo-
reaction *in vitro* by
which vitamin D is
synthesized in
plancton





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Topic(s)



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ENVIRONMENT-SMART AND CLIMATE-SMART PRIMARY PRODUCTION

SFS-32-2017: Promoting and supporting the eco-intensification of aquaculture production systems: inland (including fresh water), coastal zone, and offshore

LINKING HEALTHY OCEANS AND SEAS WITH HEALTHY PEOPLE

BG-06-2017: Interaction between people, oceans and seas: a strategic approach towards healthcare and well-being

BG-08-2017: Innovative sustainable solutions for improving the safety and dietary properties of seafood

VALORISING THE MEDITERRANEAN SEA BASIN

BG-12-2016: Towards an integrated Mediterranean Sea Observing System

BG-13-2016: Support to the BLUEMED Initiative: Coordination of marine and maritime research and innovation activities in the Mediterranean (BLUEMED)

Keywords

Vitamin D synthesis, UVB monitoring, Water pollution



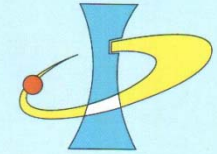
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