

# Lecture: The Life and Times of Resveratrol

Date: Thursday September 14, 2017,  
15:00-16:00

Venue: Dam Auditorium, Panum Insti-  
tuttet, Mærsk Tårnet,  
Blegdamsvej 3b, København N



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**Abstract:** Resveratrol (3,4',5-trihydroxy-trans-stilbene) was first isolated in 1939 by Takaoka from *Veratrum grandiflorum* O. Loes (root of the white hellebore). It can be speculated the trivial name resveratrol was created as a conjunction based on its chemical structure and the plant source used for isolation: a resorcinol derivative or polyphenol in resin, occurring in veratrum species, and containing hydroxyl groups (ol). Subsequently, sporadic reports appeared in the literature, most of which were descriptive in nature. However, spurred by our seminal paper published early in 1997, resveratrol became a household word and the subject of intensive investigation. Now, in addition to being the focus of over 18,000 research papers and hundreds of review articles, resveratrol has inspired monographs, conferences, symposia, patents, etc. In addition, several commercial products marketed under various tradenames are available.

Once resveratrol was brought to the limelight, early research tended to focus on pharmacological activities related to the cardiovascular system, inflammation, and carcinogenesis/cancer development. More recently, the horizon has greatly expanded. Resveratrol has been reported to mediate a vast array of unpredictable biological responses, including effects on the aging process, diabetes, neurological dysfunction, etc.

Of course, some controversy has been generated, as is the case with any substance receiving such colossal attention. For example, some discrepancies exist between *in vivo* studies with animals and clinical investigations, or between clinical studies. This is likely due to factors such as disparate doses, varying experimental settings, and subject

variation. Nevertheless, since an incredible array of positive responses has been demonstrated with mammals, it is reasonable to advocate for the conduct of additional clinical investigations. Further, since the safety profile is pristine, an added advantage is the use of resveratrol as a dietary supplement.

The ultimate fate of resveratrol remains an open question, but thus far the compound has clearly inspired innovative scientific concepts, and enhanced public awareness of preventative health care. This is quite phenomenal considering the structural simplicity of the molecule as well as common occurrence in the diet of humans, particularly as a result of grape consumption.

#### References:

- Pezzuto, J.M. The phenomenon of resveratrol: redefining the virtues of promiscuity. *Ann. NY Acad. Sci.* 1215: 123-130, 2011.
- Park, E.-J and Pezzuto, J.M. The pharmacology of resveratrol in animals and humans. *Biochim. Biophys. Acta*, 1852: 1071-1113, 2015.
- Chelsky, Z., Kondratyuk, T.P., Pezzuto, J.M., Cushman, M. and Turkson, J. A resveratrol analogue promotes ERKMAPK-dependent Stat3 serine and tyrosine phosphorylation alterations and antitumor effects *in vitro* against human tumor cells, *Mol. Pharmacol.* 88: 524-533, 2015.

**Organizers:** Steen Gammeltoft og Tuula Kallunki, Danish Society for Biochemistry and Molecular Biology and Ole Vang, Roskilde University.

**Biokemisk Forening**

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