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Sodium Resverastatin Phosphate and other Resveratrol analogs

AzTE Case # M01-035

Inventors

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Intellectual Property Status:

10/510,675 (US Utility)

Invention Description

Resveratrol, phenstatin and combretastatin A-4 are molecules belonging to the classes of stilbenes or benzophenones. Resveratrol is known to possesst a variety of useful biological properties, i.e. antileukemic and antibacterial properties, and has displayed cancer cell growth inhibition *in vitro*. Combretastatin A-4 has anti-mitotic activity and is now in phase III clinical trials to study its effectiveness in treating a variety of cancers. Early structure-activity work demonstrated that phenstatin, a benzophenone, retained most of the cytotoxic properties of combretastatin A-4.

Further structure-activity relationship efforts resulted in the discovery of other novel stilbenes and benzophenones possessing anti-neoplastic and/or anti-microbial activities.

Examples of the novel compounds are (Z)- and (E)- 3,4',5-trimethoxystibene; (Z)- and (E)- 3,5-dimethoxy-4'-hydroxystilbene; (Z)- and (E)- 3-hydroxy-4',5-dimethoxystilbene; (Z)- and (E)- 3,5-dihydroxy-4'-methoxystilbene; sodium resverastatin dibenzyl phosphate and sodium resverastatin phosphate.

Potential Applications

Since these novel compounds have comparable results to their previously known structural analogs they have applications as:

- **Anti-neoplasic and anti-cancer therapeutic agents**
- **Anti-microbial and anti-fungal agents**

Benefits and Advantages

- **Diversity** – Numerous compounds have been synthesized and their effects have been analyzed on variety of human tumor cell lines, showing a panel of diverse inhibitory profiles. Compounds also present anti-microbial/anti-fungal activities.
- **Synthesis** – The syntheses for the new compound are well described.
- **Efficacy** – Testing results demonstrate improved activities in comparison with the resveratrol.

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