

A Nonconventional Long-term Treatment of Cardiovascular Disease

A treatment to reduce the inflammation of calcified and micro-calcified plaque by providing an anti-inflammatory response at the exact location of the inflammation. The non-steroid gallium compound treatment incorporates into the lesion and provides anti-inflammatory activity that can last for months to years from a single dose and can be applied with a transdermal patch or other applications. In plaque, the gallium ions are believed to form a clathrate type bond with the micro-calcification or hydroxyapatite crystals, that are similar to osteoblasts, without changing the structure. Unlike other short-lived anti-inflammatory treatments, gallium bonds to the calcified atherosclerotic lesion and is long lasting.

Gallium compounds are FDA approved for the treatment of hypercalcemia in cancer patients and gallium⁶⁷ scans have been shown to concentrate gallium at arthritic and other forms of inflammation. Pulmonary inflammation treatment in mammals using gallium compounds has also been described (Gerber et al., U.S. Patent No. 5,700,487). Gallium has been found to inhibit the secretion of IL-6, TNF-alpha and NO from activated macrophages (Makkonen et al., *Inflammation Research*. 1995;44:523). Following a stent implantation in a patient with angina pectoris and hypercholesterolemia, to exclude a lymphoma diagnosis, a Ga⁶⁷ scans was performed and showed a high intensity uptake of gallium localized to the right coronary artery (Kritharides et al. *Circulation*. 2004;109:2156). In human and animal studies gallium has been shown to provide extended anti-inflammatory activity, especially at bone or other osteoblasts locations like micro-calcified coronary lesions.

We are looking for collaborators on a mouse study using gallium compounds to treat CVD. For more information see the recently granted patent by Jan M. Troup, U.S Patent Application No. 20190255100.

Gallium Ions Bond to the Micro-Calcified Plaque Reducing Inflammation

