TECHNOLOGY OFFER

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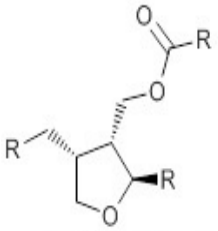
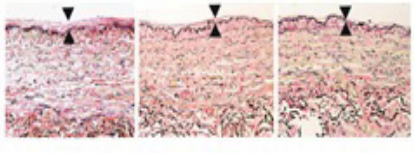
Synthetic lignans targeting cardiovascular diseases

TECHNOLOGY

In a joint research endeavour researchers at TU Wien, University of Innsbruck, University of Vienna and Medical University of Vienna have identified novel synthetic lignans to affect inflammatory processes related to surgical cardiovascular intervention.





Intimal hyperplasia is a condition mainly characterized by the infiltration of smooth muscle cells (SMCs) and their excessive proliferation at the inside of blood vessels. This inflammatory response is a key factor in the development of atherosclerosis and thrombus formation, possibly with ensuing myocardial infarction or stroke.

Compounded by damage to endothelial cells (ECs), this vessel-occluding over-response is frequently encountered in the wake of coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI, stenting), leading to eventual restenosis.

Starting from natural compound leoligin, improved synthetic analogs were prepared with favourable properties to prevent VSMC proliferation concomitantly not affecting EC to keep blood vessel structural integrity unaffected.

The novel compounds may have highly benefic ial effects for preparation of cardiac by-pass implants as well as for stent conduits. Potential applications range from administration within by-pass preparation to controlled-release devices for stents.

So far, patent families based on the natural compound isolate as well as for synthetic analogs have been filed.

NEXT STEPS

- Validation of phenotype screening
- Toxicological assessment
- Optimization of pharmacological parameters (logP, logD)

REFERENCE M049/13

APPLICATIONS

- By-pass surgery
- Controlled-release stent implants

KEYWORDS

- by-pass surgery
- stent implantation
- treatment of heart diseases

DEVELOPMENT STATUS

- New compounds with improved VSCM/EC selectivity identified
- Efficient synthetic access to compound class enabled by chiral synthesis

IPR

AT, EP, US patent applications filed

OPTIONS

- patent sale
- R&D cooperation
- license agreement

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