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CENTER FOR APPLIED MEDICAL RESEARCH
UNIVERSITY OF NAVARRA

A new antithrombotic agent
with no effect on bleeding

- There is a **need** to develop safer and more effective treatments to prevent bleeding in patients undergoing anticoagulation therapy.
- A **novel target** to prevent thrombus formation has been **identified** (from biobank and patients data).
- **Target validation:**
  - Chemical probes identified
  - *In vivo* proof of concept using three different thrombosis models
  - **Safety**: minimal bleeding risk and no effect on coagulation
- **Primary indication**: Patients in high risk of bleeding undergoing anticoagulant therapy.

Scope of the problem

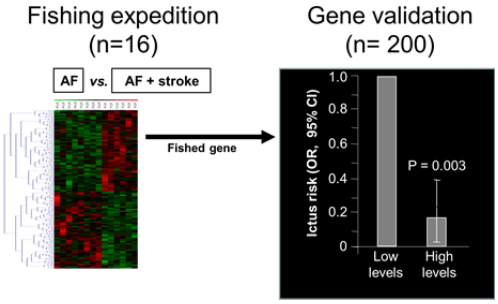
- Current treatments to prevent stroke are based on anticoagulants (warfarin, dabigatran, rivaroxaban…), which are among the top-10 more toxic drugs, causing major bleeding in 5% of patients/year.
- The rates of major bleeding for dabigatran at the 150 mg BID dose and rivaroxaban were similar to warfarin in stroke prevention in atrial fibrillation, which accounts for about 14% of all strokes (200,000 per year).
- Caution should be exercised in prescribing rivaroxaban at approved doses to patients at increased risk of bleeding complications or those with low body weight (< 50 kg), morbid obesity, or renal dysfunction.

Patient need addressed

- Patients undergoing antiplatelet therapy who are or should be taking anticoagulant therapy, with high risk of bleeding (one in three).
- Patients with kidney failure undergoing anticoagulant therapy (high bleeding risk).
- Patients undergoing anticoagulation therapy with bleeding risk (one in three).

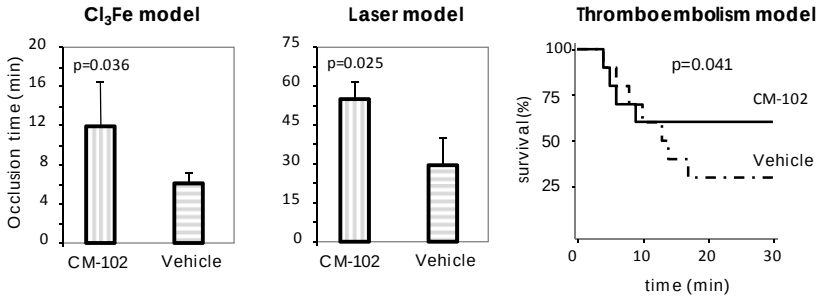
Target Identification

- A new stroke protective gene in AF has been identified in blood samples from 16 patients with AF and stroke *vs* AF without stroke.
- The gene has been validated in blood samples from 200 patients with AF and stroke *vs* AF without stroke.



Target Validation

- Target knock-out mice show the desired biological response.
- Identified pharmacological tool compounds increase gene expression and show antithrombotic effect.
- *In vivo* Proof of Concept using three different thrombosis models.



Safety

- No effect on coagulation.
- No effect on bleeding. Minimal bleeding risk.

Intellectual Property

Patent application is filed (Jan-2015).

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