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The internship of ECNP junior scientists will be focused on drug discovery processes that are currently applied in the Neuropsychopharmacology Lab of the most modern Biological Tower of the Biometec, University of Catania. The goal will be to identify and validate new pharmacological targets in animal models of depression [Unpredictable chronic mild stress (UCMS), alcohol dependence, schizophrenia (MK-801-treatment and PPI methodology) and Alzheimer's disease (3xTg-AD mice).

**Subject research:** 1) Role of dopamine D3R and dysbindin as a new pharmacological target for the treatment of depression, schizophrenia (cognitive symptoms) and alcohol dependence.

2) Transforming-Growth-Factor- $\beta$ 1 (TGF- $\beta$ 1) pathway as common pharmacological target both in depression and AD: role of second-generation antidepressants drugs.

**Facility equipment** available at the Biological Tower, Biometec are :(i) complete set-up for behavioral and cognitive analysis of animal models of psychiatric disorders (PPI, Elevated Plus maze, Passive Avoidance Test, Morris Water Maze, T-maze, Novel Object Recognition test, Forced Swim Test, Sucrose Preference Test); (ii) complete equipment for histology and immunohistochemistry analysis, including up-to-date confocal setups; (iii) fully equipped system for WB analysis of D2/D3-related signaling pathways in animal models of psychiatric disorders ; (iv) common animal facility; (v) state of the art platforms for comprehensive "omics" analysis; (vi) electrophysiology patch clamp setups.