In Vitro Spermatostatic Activity of Mulinane- and Azorellane-type Diterpenes on Human Spermatozoa

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SUMMARY. Mulinenic acid (1), mulinolic acid (2) and azorellan-17,13-(β)olide (3) isolated from Mulinum spinosum and Azorella trifurcata have been evaluated for their spermatostatic activity on human spermatozoa. In vitro sperm motility, viability and recovery of the motility were assessed. Compounds 2 and 3 showed significant spermatostatic properties. Reversible effects for 2 (% Motile Cells = 32 ± 3, % Living Cells = 84 ± 4) and irreversible effects for 3 (% Motile Cells = 34 ± 4, % Living Cells = 82 ± 4) were observed. Compound 1 showed moderate bioactivity. Compounds 2-3 presented remarkable effects on human sperm motility and we were encouraged to consider their application as a potential non hormonal male contraceptive agent.

KEY WORDS: Azorellan-17,13-(β)olide, Mulinenic acid, Mulinolic acid, Spermatostatic bioactivity, Sperm viability, Sperm motility.