

SUPPLEMENTARY MATERIAL

Rheological Behavior of a New Mucoadhesive Oral Formulation Based on Sodium Chondroitin Sulfate, Xyloglucan and Glycerol

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Table S1. Gradient elution scheme for HPLC caffeine determination.

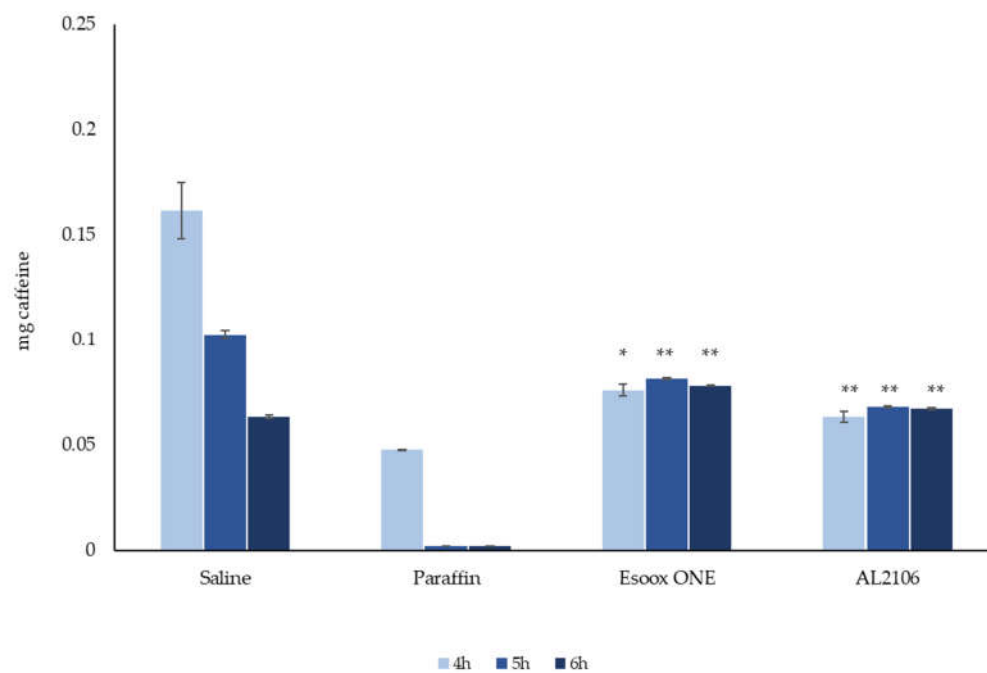
Time (min)	% 1:1 Acetonitrile/Methanol	% Water (+ 10 mM Ammonium Acetate)
0	20	80
7	20	80
10	80	20
15	80	20
17	20	80
20	20	80

Table 2. Composition of the tested formulations.

	AL2023	AL2104	AL2103	AL2105	AL2106	AL2100	AL2101	AL2102
Chondroitin sulfate sodium	✓	✓	✓	✓	✓	✓	✓	✓
Xilogel	✓	✓	✓	✓	✓	✓	✓	✓
Glycerol	✓	✓	✓	✓	✓	✓	✓	✓
Sodium bicarbonate	✓	✓	✓	✓	✓	✓	✓	✓
Xanthan gum	✓	✓	✓	✓	✓	✓	✓	✓
Xylitol	✓	✓	✓	✓	✓	✓	✓	✓
Sodium benzoate	✓	✓	✓	✓	✓	✓	✓	✓
Natural orange flavouring	✓	✓	✓	✓	✓	✓	✓	✓
Citric acid, anhydrous	✓	✓	✓	✓	✓	✓	✓	✓
Potassium sorbate	✓	✓	✓	✓	✓	✓	✓	✓
EDTA	-	-	-	-	✓	✓	✓	✓
Water	✓	✓	✓	✓	✓	✓	✓	✓
Poloxamer 407	-	✓	-	-	-	-	✓	-
Polyvinylpyrrolidone PVP K30	-	✓	-	✓	-	-	✓	✓
Hydroxypropylmethylcellulose	-	-	✓	✓	✓	✓	-	✓

Table S3. Composition of the Esoxx One formulation.

Esoxx® One
Chondroitin sulfate sodium
Sodium hyaluronate
Poloxamer 407
Sodium bicarbonate
Polyvinylpyrrolidone
Xylitol
Sodium benzoate
Flavouring
Potassium sorbate
Water

**Figure S1.** Quantification of caffeine in the basolateral receptor fluid after 4, 5 and 6 h from the application (mean \pm S.D. of six replicates). Statistical significance was set at * $p < 0.005$ or ** $p < 0.0005$ vs. saline.

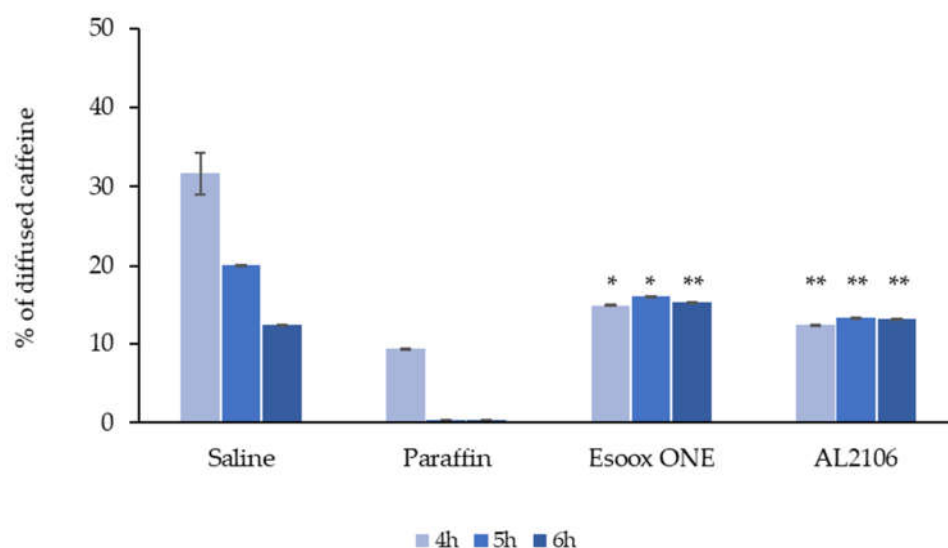


Figure S2. Amount of caffeine (mean \pm S.D. of six replicates) diffused in the basolateral receptor fluid after 4, 5 and 6 h from the application, expressed as the percentage of the applied dose (0.51 mg). Statistical significance was set at * $p < 0.005$ or ** $p < 0.0005$ vs. saline.

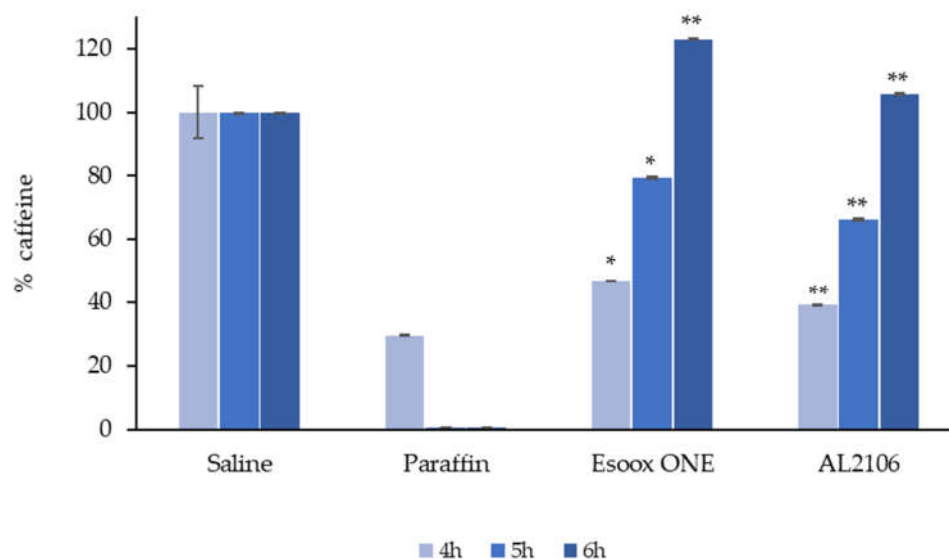


Figure S3. Diffusion of caffeine in the basolateral receptor fluid after 4, 5 and 6 h from the application, expressed as a percentage vs. negative control (saline) (mean \pm S.D. of six replicates). Statistical significance was set at * $p < 0.005$ or ** $p < 0.0005$ vs. saline.