A cholecystokinin receptor agonist (CCK-8) induces adiponectin production in rat white adipose tissue

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Table 1.-Effect of acute and chronic CCK-8 on plasma parameters. Acute treatment with a single dose of CCK-8 (10μg/kg) had no effect on plasma levels of glucose, triglycerides (TG), non-esterified fatty acids (NEFA), insulin, leptin and total cholecystokinin immunoreactivity (CCK). Chronic CCK-8 treatment had no effect on plasma glucose and CCK, but reduced TG, NEFA insulin, and leptin levels.

	Acute treatment		Chronic treatment	
	Saline	**CCK-8 (10 μg/kg)**	**Saline**	**CCK-8 (10 μg/kg)**
Glucose (mg/dl)	110.5±3.4	110.8±2.3	101.9±4.0	90.9±2.6
TG (mg/dl)	159.6±25.7	116.6±20.8	152.6±12.7	114.4±10.3*
NEFA (mg/dl)	43.4±5.1	35.3±3.4	37.8±2.4	31.9±1.2*
Insulin (ng/ml)	0.77±0.13	0.83±0.18	1.85±0.24	0.92±0.14*
Leptin (ng/ml)	2.3±0.5	4.1±1.2	0.87±0.1	0.26±0.1*
CCK (ng/ml)	0.77±0.10	0.74±0.09	0.47±0.01	0.53±0.06

Values are means ± S.E.M. (n=6). *P<0.05 compared to their respective saline control groups (Newman Keuls' test).

This table has been already published in Plaza et al. 2018 (Plaza A, Merino B, Cano V, Domínguez G, Pérez-Castells J, Fernández-Alfonso MS, Sengenès C, Chowen JA & Ruiz-Gayo M 2018 Cholecystokinin is involved in triglyceride fatty acid uptake by rat adipose tissue. *Journal of Endocrinology* 236 137-150.

Figure 1. Effect of CCK-8 on adiponectin production in subcutaneous pre-adipocytes.

Two-way ANOVA revealed an effect of pharmacological treatment ($F_{(1,24)}$=4.822; P<0.05) and time ($F_{(2,24)}$=13.59; P<0.05), without significant interaction CCK-8 x time. One-way ANOVA indicated only an effect of CCK-8 (ANOVA-1; $F_{(2,12)}$=8.739, P<0.05), that was significant 1h after CCK-8 withdrawal (P<0.05). In contrast, adiponectin content remained unchanged during the assay in saline-treated cells (ANOVA-1; $F_{(2,12)}$=3.059, P=0.084).

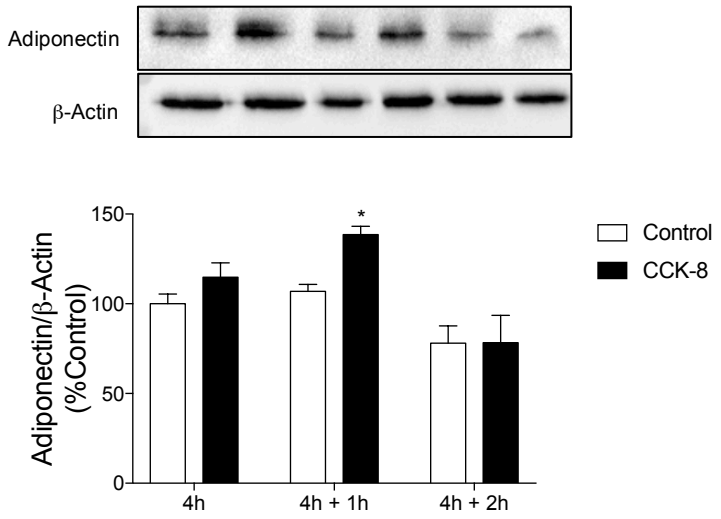

Figure 2: Effect of CCK-8 on the expression of IL1b, IL6, IL10 and TNFα

Acute treatment with CCK-8 suppressed the expression of Il6 ($t_{(8)}$=3.277; P<0.05) and up-regulated *Il10* expression ($t_{(8)}$=2.983; P<0.05) in Vis-WAT, whereas chronic CCK-8 repressed the *Il6*, *Il1b* and *Tnfa* expression ($t_{(10)}$=2.795, P<0.05; $t_{(10)}$=2.957, P<0.05 and $t_{(10)}$=2.535, P<0.05, respectively). Regarding Sc-WAT, acute treatment only reduced the expression of *Il1b* ($t_{(8)}$=3.039; P<0.05) while chronic treatment reduced the expression of *Il6*, *Il1b* and *Tnfa* ($t_{(10)}$=9.312, P<0.05; $t_{(10)}$=3.028, P<0.05 and $t_{(10)}$=3.705, P<0.05, respectively).