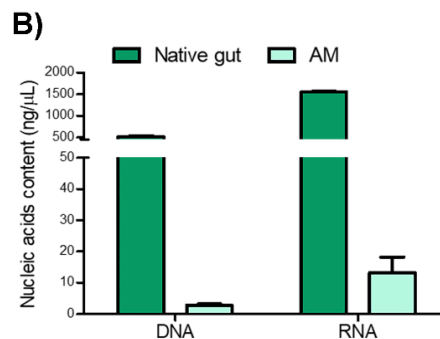
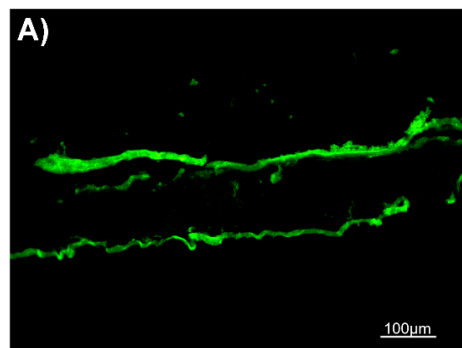


**Table S1.** Target genes analyzed through RT<sup>2</sup> Profiler PCR Array

Gene name	Symbol	Refseq
Adrenergic, alpha-1A-, receptor	<i>Adra1a</i>	NM_017191
Adrenergic, alpha-1D-, receptor	<i>Adra1d</i>	NM_024483
Adrenergic, alpha-2A-, receptor	<i>Adra2a</i>	NM_012739
Adrenergic, beta-2-, receptor; surface	<i>Adrb2</i>	NM_012492
Adrenergic, beta-3-, receptor	<i>Adrb3</i>	NM_013108
Arginine vasopressin receptor 1A	<i>Avpr1a</i>	NM_053019
Arginine vasopressin receptor 1B	<i>Avpr1b</i>	NM_017205
Bombesin-like receptor 3	<i>Brs3</i>	NM_152845
Cholecystokinin B receptor	<i>Cckbr</i>	NM_013165
Cholinergic receptor; muscarinic 1	<i>Chrm1</i>	NM_080773
Cholinergic receptor; muscarinic 4	<i>Chrm4</i>	NM_031547
Cholinergic receptor; muscarinic 5	<i>Chrm5</i>	NM_017362
Cholinergic receptor; nicotinic, alpha 3	<i>Chrna3</i>	NM_052805
Cholinergic receptor; nicotinic, alpha 4	<i>Chrna4</i>	NM_024354
Cholinergic receptor; nicotinic, alpha 5	<i>Chrna5</i>	NM_017078
Cholinergic receptor; nicotinic, alpha 6	<i>Chrna6</i>	NM_057184
Cholinergic receptor; nicotinic, alpha 7	<i>Chrna7</i>	NM_012832
Cholinergic receptor; nicotinic, epsilon	<i>Chrne</i>	NM_017194
Cannabinoid receptor 1 (brain)	<i>Cnr1</i>	NM_012784
Dopamine receptor D1A	<i>Drd1</i>	NM_012546
Dopamine receptor D2	<i>Drd2</i>	NM_012547
Dopamine receptor D5	<i>Drd5</i>	NM_012768
Gamma-aminobutyric acid (GABA) B receptor 1	<i>Gabbr1</i>	NM_031028
Gamma-aminobutyric acid (GABA) B receptor 2	<i>Gabbr2</i>	NM_031802
Gamma-aminobutyric acid (GABA) A receptor, alpha 1	<i>Gabra1</i>	NM_183326
Gamma-aminobutyric acid (GABA-A) receptor, subunit alpha 2	<i>Gabra2</i>	NM_001135779
Gamma-aminobutyric acid (GABA) A receptor, alpha 4	<i>Gabra4</i>	NM_080587
Gamma-aminobutyric acid (GABA) A receptor, alpha 5	<i>Gabra5</i>	NM_017295
Gamma-aminobutyric acid (GABA) A receptor, alpha 6	<i>Gabra6</i>	NM_021841
Gamma-aminobutyric acid (GABA) A receptor, beta 1	<i>Gabrb1</i>	NM_012956
Gamma-aminobutyric acid (GABA) A receptor, beta 3	<i>Gabrb3</i>	NM_017065
Gamma-aminobutyric acid (GABA) A receptor, delta	<i>Gabrd</i>	NM_017289
Gamma-aminobutyric acid (GABA) A receptor, epsilon	<i>Gabre</i>	NM_023091
Gamma-aminobutyric acid (GABA) A receptor, gamma 1	<i>Gabrg1</i>	NM_080586
Gamma-aminobutyric acid (GABA) A receptor, gamma 2	<i>Gabrg2</i>	NM_183327
Gamma-aminobutyric acid (GABA) A receptor, gamma 3	<i>Gabrg3</i>	NM_024370
Gamma-aminobutyric acid (GABA) receptor, theta	<i>Gabrq</i>	NM_031733
Gamma-aminobutyric acid (GABA) receptor, rho 1	<i>Gabbr1</i>	NM_017291
Gamma-aminobutyric acid (GABA) receptor, rho 2	<i>Gabbr2</i>	NM_017292
Glucagon receptor	<i>Gcgr</i>	NM_172092
Glutamate receptor; ionotropic, AMPA 1	<i>Gria1</i>	NM_031608
Glutamate receptor; ionotropic, AMPA 2	<i>Gria2</i>	NM_017261
Glutamate receptor; ionotropic, AMPA 3	<i>Gria3</i>	NM_032990
Glutamate receptor; ionotropic, kainate 1	<i>Grik1</i>	NM_017241
Glutamate receptor; ionotropic, kainate 2	<i>Grik2</i>	NM_019309
Glutamate receptor; ionotropic, kainate 4	<i>Grik4</i>	NM_012572
Glutamate receptor; ionotropic, kainate 5	<i>Grik5</i>	NM_031508
Glutamate receptor; ionotropic, N-methyl D-aspartate 1	<i>Grin1</i>	NM_017010
Glutamate receptor; ionotropic, N-methyl D-aspartate 2A	<i>Grin2a</i>	NM_012573
Glutamate receptor; ionotropic, N-methyl D-aspartate 2B	<i>Grin2b</i>	NM_012574
Glutamate receptor; ionotropic, N-methyl D-aspartate 2C	<i>Grin2c</i>	NM_012575
Glutamate receptor; metabotropic 1	<i>Grm1</i>	NM_017011
Glutamate receptor; metabotropic 3	<i>Grm3</i>	NM_001105712
Glutamate receptor; metabotropic 4	<i>Grm4</i>	NM_022666
Glutamate receptor; metabotropic 5	<i>Grm5</i>	NM_017012
Glutamate receptor; metabotropic 6	<i>Grm6</i>	NM_022920
Glutamate receptor; metabotropic 7	<i>Grm7</i>	NM_031040
Glutamate receptor; metabotropic 8	<i>Grm8</i>	NM_022202
Gastrin releasing peptide receptor	<i>Grpr</i>	NM_012706
Hypocretin (orexin) receptor 2	<i>Hcrtr2</i>	NM_013074

Histamine receptor H 1	<i>Hrh1</i>	NM_017018
Histamine receptor H4	<i>Hrh4</i>	NM_131909
5-hydroxytryptamine (serotonin) receptor 1A	<i>Htr1a</i>	NM_012585
5-hydroxytryptamine (serotonin) receptor 1B	<i>Htr1b</i>	NM_022225
5-Hydroxytryptamine (serotonin) receptor 1D	<i>Htr1d</i>	NM_012852
5-hydroxytryptamine (serotonin) receptor 1F	<i>Htr1f</i>	NM_021857
5-hydroxytryptamine (serotonin) receptor 2A	<i>Htr2a</i>	NM_017254
5-hydroxytryptamine (serotonin) receptor 2C	<i>Htr2c</i>	NM_012765
5-hydroxytryptamine (serotonin) receptor 3a	<i>Htr3a</i>	NM_024394
5-hydroxytryptamine (serotonin) receptor 4	<i>Htr4</i>	NM_012853
5-hydroxytryptamine (serotonin) receptor 7	<i>Htr7</i>	NM_022938
Neuropeptide Y receptor Y2	<i>Npy2r</i>	NM_023968
Neuropeptide Y receptor Y5	<i>Npy5r</i>	NM_012869
Neurotensin receptor 2	<i>Ntsr2</i>	NM_022695
Oxytocin receptor	<i>Oxtr</i>	NM_012871
Prokineticin receptor 2	<i>Prokr2</i>	NM_138978
Secretin receptor	<i>Sctr</i>	NM_031115
Somatostatin receptor 1	<i>Sstr1</i>	NM_012719
Somatostatin receptor 2	<i>Sstr2</i>	NM_019348
Somatostatin receptor 4	<i>Sstr4</i>	NM_013036
Tachykinin receptor 1	<i>Tacr1</i>	NM_012667
Tachykinin receptor 2	<i>Tacr2</i>	NM_080768
Tachykinin receptor 3	<i>Tacr3</i>	NM_017053
Translocator protein	<i>Tspo</i>	NM_012515
Actin, beta	<i>Actb</i>	NM_031144
Beta-2 microglobulin	<i>B2m</i>	NM_012512
Hypoxanthine phosphoribosyltransferase 1	<i>Hprt1</i>	NM_012583
Lactate dehydrogenase A	<i>Ldha</i>	NM_017025
Ribosomal protein, large, P1	<i>Rplp1</i>	NM_001007604



**Figure S1.** Decellularization procedure preserved the integrity of Laminin and guaranteed the removal of 99% cellular content. Immunofluorescence detection of laminin (green), in gut acellularized matrices (A). Evaluation of DNA/RNA content (ng/µL) in AMs (B). Magnification: X10

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