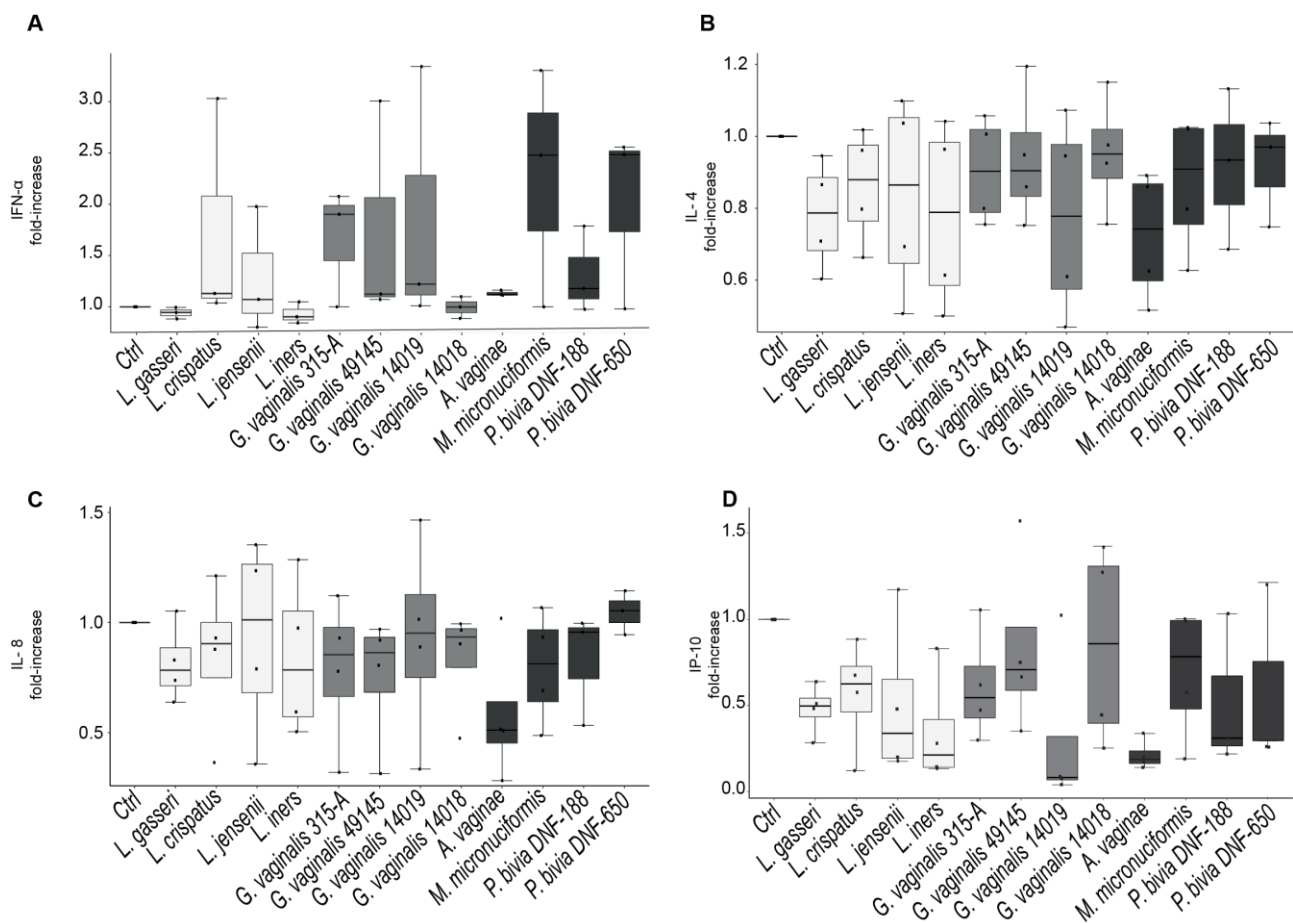
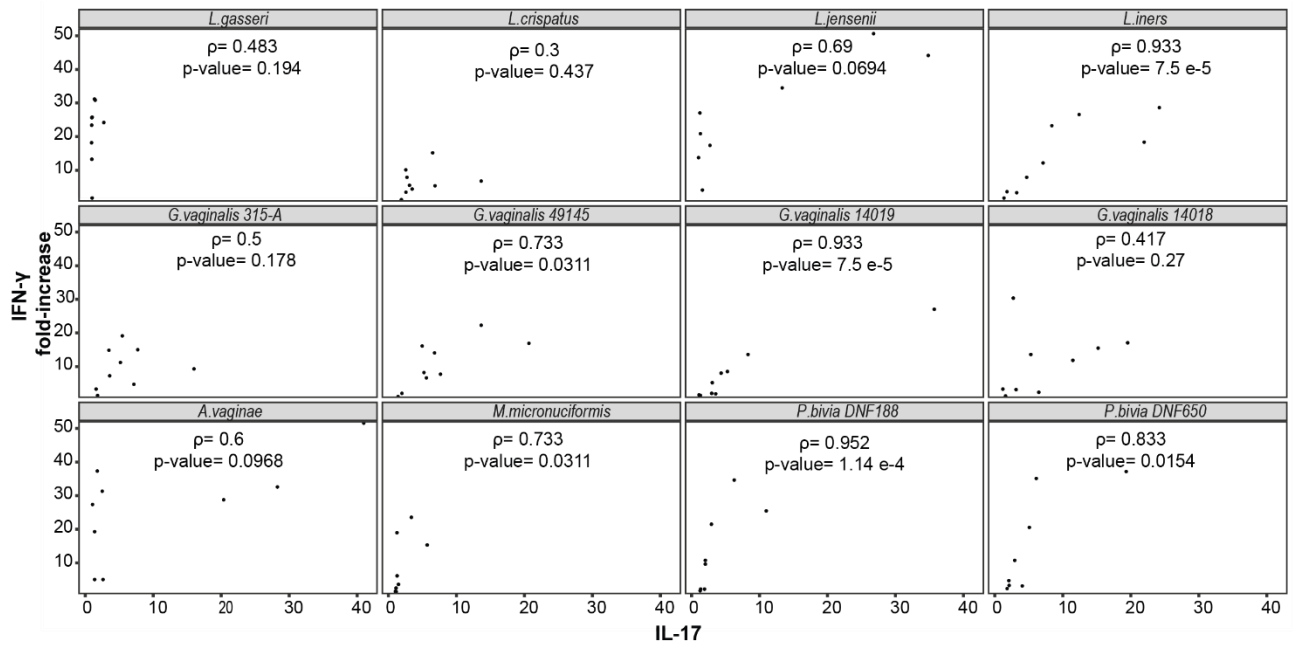


Supplementary figure S1. Effects of bacterial lysates on CaSki cell viability. ATP production by cells cultured with bacteria lysates (1µg/mL) from (A) *Lactobacillus* spp. or from (B) others vaginal dysbiosis bacteria (*A. vaginae*, *M. micronuciformis*, *P. bivia* DNF-188 and *P.bivia* DNF 650) for 24 hrs. The bar-graph shows results from one representative experiment out of three performed. Data are expressed as ATP produced by stimulated cultures/unstimulated control \pm standard deviation (EXP/CTRL \times 100). Differences among stimulated and unstimulated cultures were evaluated by Student t-test. P * = p-value < 0.05; **= p-value < 0.01; ***= p-value < 0.001.



Supplementary figure S2. Cytokine's production by PBMCs stimulated with dominant species of vaginal microbiota.

Cytokine concentration was measured in culture supernatants of bacterial-stimulated cultures. Results are expressed as fold increase in cytokine concentration respect to unstimulated cultures. The bar-graph shows the median and the whisker is calculated on the formula $IQR \times 1.5$. Statistical analysis was performed by Kruskal-Wallis. No significant differences among cultures were found.



Supplementary figure S3. Spearman's correlation analysis among the cytokines' production induced by *Lactobacillus* spp. and other bacteria related to vaginal dysbiosis. Correlation among cytokines produced under different stimulation was evaluated by Spearman rank correlation analysis.

A

	IL-1 β (pg/mL) \pm SD	TNF- α (pg/mL) \pm SD	IL-8 (pg/mL) \pm SD
<i>Ctrl</i>	1.47 \pm 0.13	4.01 \pm 0.12	742.32 \pm 8.41
<i>L.gasseri</i>	1.97 \pm 0.81	2.46 \pm 0.11	647.05 \pm 131.71
<i>L.crispatus</i>	1.26 \pm 0.14	5.94 \pm 0.08	568.69 \pm 95.32
<i>L.jensenii</i>	1.22 \pm 0.10	2.94 \pm 0.13	707.51 \pm 12.43
<i>L.iners</i>	1.15 \pm 0.10	2.44 \pm 0.09	739.50 \pm 40.47
<i>G.vaginalis</i> 315-A	1.10 \pm 0.09	6.60 \pm 0.25	632.30 \pm 52.15
<i>G.vagnalis</i> 49145	1.08 \pm 0.03	1.71 \pm 0.24	727.94 \pm 27.74
<i>G.vaginalis</i> 14019	1.26 \pm 0.07	7.75 \pm 0.11	797.51 \pm 13.256
<i>G.vagnalis</i> 14018	1.87 \pm 0.28	7.02 \pm 0.12	876.77 \pm 17.57
<i>A.vaginae</i>	1.39 \pm 0.28	2.97 \pm 0.12	744.07 \pm 49.36
<i>M.micronuciformis</i>	1.27 \pm 0.30	7.48 \pm 0.33	778.40 \pm 10.28
<i>P.bivia</i> DNF188	1.08 \pm 0.03	1.97 \pm 0.17	740.15 \pm 63.77
<i>P.bivia</i> DNF650	1.18 \pm 0.05	2.43 \pm 0.15	769.81 \pm 3.75

B

	IL-1 β (pg/mL) \pm SD	TNF- α (pg/mL) \pm SD	IL-8 (pg/mL) \pm SD
<i>Ctrl</i>	1.90 \pm 0.04	16.41 \pm 2.29	2684.12 \pm 106.32
<i>L.gasseri</i>	2.52 \pm 0.48	10.93 \pm 1.44	2272.98 \pm 51.08
<i>L.crispatus</i>	2.43 \pm 0.64	8.99 \pm 0.71	1953.39 \pm 51.26
<i>L.jensenii</i>	2.61 \pm 0.42	11.10 \pm 1.11	2538.76 \pm 82.63
<i>L.iners</i>	2.45 \pm 0.35	10.00 \pm 0.61	2848.66 \pm 80.62
<i>G.vaginalis</i> 315-A	2.40 \pm 0.14	8.88 \pm 0.96	2176.82 \pm 155.30
<i>G.vagnalis</i> 49145	2.43 \pm 1.21	8.99 \pm 0.95	2609.90 \pm 113.51
<i>G.vaginalis</i> 14019	2.71 \pm 0.11	9.45 \pm 0.31	3182.85 \pm 99.00
<i>G.vagnalis</i> 14018	2.61 \pm 0.40	9.64 \pm 0.21	2937.82 \pm 177.05
<i>A.vaginae</i>	2.26 \pm 0.14	8.52 \pm 0.47	2877.37 \pm 49.34
<i>M.micronuciformis</i>	3.09 \pm 0.55	11.84 \pm 0.95	2882.99 \pm 169.91
<i>P.bivia</i> DNF188	2.22 \pm 0.118	8.35 \pm 0.39	2142.71 \pm 70.51
<i>P.bivia</i> DNF650	2.30 \pm 0.35	9.79 \pm 0.74	1679.37 \pm 102.46

Supplementary Table S1. Cytokine's production by epithelial cells stimulated with dominant species of vaginal microbiota. SiHa (A) and CaSki (B) cells were cultured with heat-inactivated bacterial cells (50 CFU/cell) from *Lactobacillus* spp., or *Gardnerella vaginalis*, or other vaginal dysbiosis bacteria (*A. vaginae*, *M. micronuciformis*, *P. bivia* DNF-188 and *P. bivia* DNF-650). Cytokine's concentration was assessed in supernatants after 5 days of culture through Multiplex Assay (IL-1 β , TNF- α) or ELISA Assay (IL-8).