### Table S1 Number of reads and OTUs according to HPV status and abnormal cytology result (N=308)

| HPV status | Abnormal cervical cytology | Number of samples | Bacterial reads | Number of OTUs |
|------------|-----------------------------|-------------------|-----------------|----------------|
| High-risk  | Yes                         | 61                | 1,656,906       | 2,855          |
|            | No                          | 110               | 3,017,918       | 4,931          |
| Low-risk   | Yes                         | 46                | 1,257,391       | 2,124          |
|            | No                          | 89                | 2,548,744       | 4,103          |
| None       | Yes                         | 2                 | 54,396          | 92             |
|            | No                          | 0                 |                 |                |

OTU, operational taxonomic unit.

**Figure S1** *L. gasseri* relative abundance abnormal cervical cytology regardless of any HPV infection (CC), HR HPV+ infection only without cytologic abnormality (HPV+), and women without cytologic abnormalities (negative for intraepithelial lesion or malignancy) or HPV infection (NILM/HPV−) (N=308). The relative abundance of *L. gasseri* was significantly greater among NILM/HPV− women than among women with abnormal cervical cytology or HR HPV+ by LEfSe (LDA =4.17; P=0.0009).