

TABLE 3: Antibiotic MICs ($\mu\text{g/mL}$) in LAPTg broth for vaginal *Lactobacillus* strains. STR: streptomycin, KAN: kanamycin, NOR: norfloxacin, NOV: novobiocin, CHL: chloramphenicol, VAN: vancomycin y MTZ: metronidazole. The assays were performed by triplicate.

<i>Lactobacillus</i> strain	MIC ($\mu\text{g/mL}$)						
	STR	KAN	NOR	NOV	CHL	VAN	MTZ
<i>L. acidophilus</i> CRL 1266	50	100	> 1000	10	250	10	> 1000
<i>L. gasseri</i> CRL 1259	50	500	> 1000	10	250	< 1	> 1000
<i>L. acidophilus</i> CRL 1251	50	500	500	10	250	< 1	> 1000
<i>L. paracasei</i> CRL 1289	50	250	1000	< 1	250	< 1	> 1000
<i>L. johnsonii</i> CRL 1294	50	250	750	< 1	250	< 1	> 1000
<i>L. salivarius</i> CRL 1328	100	250	250	< 1	250	> 1000	> 1000

TABLE 4: Antibiotic MIC ($\mu\text{g/mL}$) in LAPTg agar for vaginal *Lactobacillus* strains. CRO: ceftriaxone, CTX: cefotaxime, CAZ: ceftazidime, CIP: ciprofloxacin, IPM: imipenem, CLR: clarithromycin, TET: tetracycline, OXA: oxacillin, NIT: nitrofurantoin, ERY: erythromycin, CLI: clindamycin, AMP: ampicillin, ATM: aztreonam, RIF: rifampin. The assays were performed by triplicate.

<i>Lactobacillus</i> strain	MIC ($\mu\text{g/mL}$)						
	CRO	CTX	CAZ	CIP	IPM	CLR	TET
<i>L. acidophilus</i> CRL 1266	100	100	100	> 100	1	1	100
<i>L. gasseri</i> CRL 1259	> 100	> 100	> 100	> 100	> 100	> 100	> 100
<i>L. acidophilus</i> CRL 1251	100	100	100	100	10	10	10
<i>L. paracasei</i> CRL 1289	> 100	> 100	> 100	> 100	> 100	> 100	> 100
<i>L. johnsonii</i> CRL 1294	> 100	> 100	> 100	> 100	> 100	100	100
<i>L. salivarius</i> CRL 1328	100	1	100	10	10	1	1

<i>Lactobacillus</i> strain	MIC ($\mu\text{g/mL}$)						
	OXA	NIT	ERY	CLI	AMP	ATM	RIF
<i>L. acidophilus</i> CRL 1266	> 100	1	100	10	1	100	> 100
<i>L. gasseri</i> CRL 1259	1	1	1	1	> 100	100	0.1
<i>L. acidophilus</i> CRL 1251	10	10	1	0.1	1	> 100	0.1
<i>L. paracasei</i> CRL 1289	100	> 100	100	> 100	> 100	100	> 100
<i>L. johnsonii</i> CRL 1294	> 100	> 100	> 100	> 100	10	> 100	> 100
<i>L. salivarius</i> CRL 1328	10	10	10	0.1	1	> 100	0.1

they have been considered as “GRAS” for the FDA (Food and Drug Administration, USA) [24]. The available standard techniques and the guidelines for the disc diffusion method have been provided by the NCCLS only for selected aerobic and anaerobic bacteria or yeasts related with laboratory clinical diagnostic. However, many researchers have developed modifications of the semiquantitative disc assay for lactobacilli [19, 25–28]. Different base media and type strains have been employed but reference data are still not available. The E-test (AB Biodisk) has also been used and recommended as an easy diffusion test but modifications of the original protocol had to be introduced for lactobacilli [23, 29].

In the present paper, the conventional methodology described by Bauer et al [18] was first applied. Müller Hinton base medium was employed to test the effect of the antibiotics routinely used for the treatment of urinary tract infections (UTIs) on *Lactobacillus* strains. As previously described by other researchers [30], the growth of lactobacilli in Müller Hinton was poor and irregular, and it was not possible to measure the diameter of the inhibition halos. When LAPTg was employed instead of Müller Hinton, the growth was optimum while in MRS it was appropriate only for some *Lactobacillus* strains but not for all of them. The last observation

is coherent with the composition of these two media. LAPTg has a wider variety of nutrients and allows the growth of lactobacilli under aerobic or microaerophilic conditions, while MRS as well as LBS [31] seems to be more appropriate for microaerophilic or anaerobic growth (data not shown).

According to our results, the growth of vaginal lactobacilli in LAPTg and MRS agars was homogeneous and the inhibition halos were clearly defined (except for *L. gasseri* CRL1259 and *L. johnsonii* CRL1294 which were not able to grow in MRS under microaerophilic incubation). Charteris et al [23, 32] have also used MRS for the disc diffusion and the E-test under anaerobic incubation conditions in both cases. Based on size of the halos, the mentioned authors have classified the microorganisms into susceptible, moderate susceptible, and resistant. However, the reasons by which they consider the published ranges for the susceptibility category are not explained. Considering that the size of the halos depends on the diffusion media [33], reference data obtained in the same media are supposed to be employed for categorization purposes. Other examples of the use of different base media are the publications of Bayer et al [25] that have used Müller Hinton supplemented with yeast extract and L-cysteine (0.2% and 0.05%, resp), Felten et al [26] who have employed Müller Hinton with 5% of sheep blood, and