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Biomimetic osteochondral scaffold for chondral and osteochondral lesions of the knee: clinical results at long-term follow-up

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Faculty Disclosure Information

Iacopo Romandini
has nothing to disclose



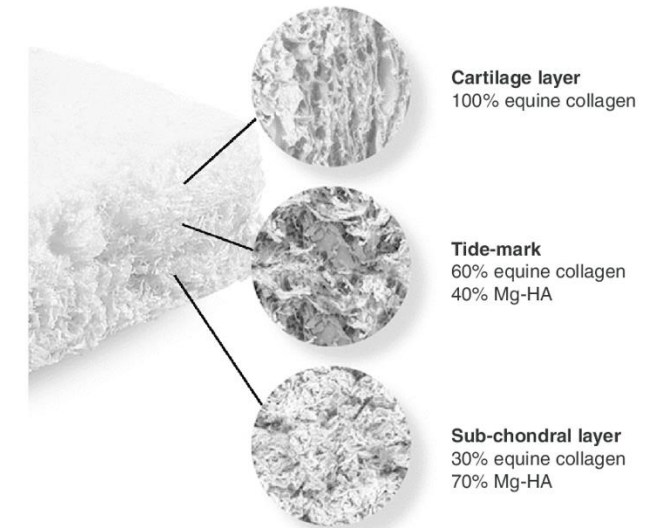
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Background

Good short- and mid- term results have been reported
for chondral and osteochondral lesions
of the knee treated with a
cell-free biomimetic osteochondral scaffold



To evaluate **long term clinical results** and **failure rate** of
chondral and osteochondral lesions treated
with the implantation of a
biomimetic cell-free osteochondral scaffold



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Methods



PATIENT DEMOGRAPHICS

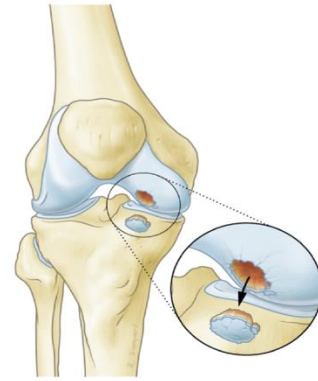
56 patients (38 ♂; 18 ♀)

Age: 32.0 ± 11 y

BMI: 23.0 ± 2.7 kg/m²

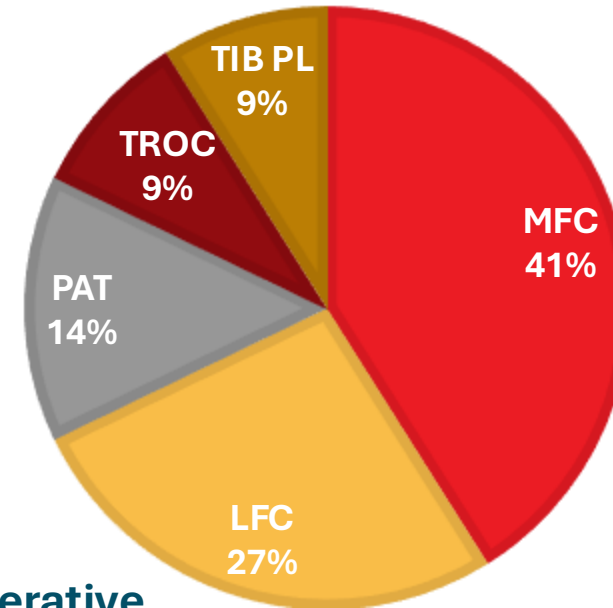
Lesion size: 4.1 ± 3 cm²

Lesion grade: ICRS III - IV



LESIONS

- ✓ 25 OCD
- ✓ 19 Degenerative
- ✓ 12 Post-traumatic



CLINICAL EVALUATION

- ✓ IKDC Subjective Score
- ✓ Tegner score



FOLLOW-UP

- ✓ Baseline
- ✓ 24 months
- ✓ 60 months
- ✓ >120 months



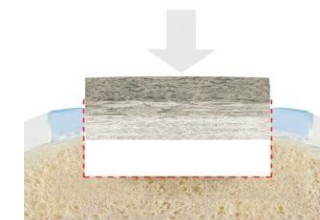
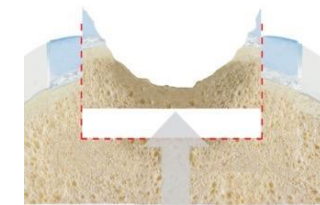
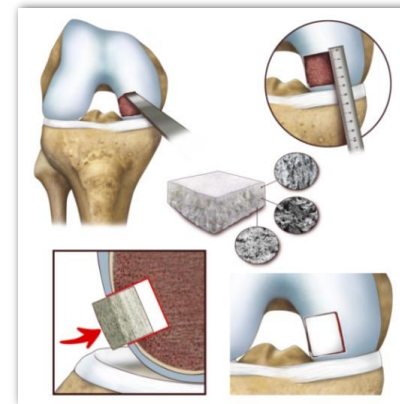
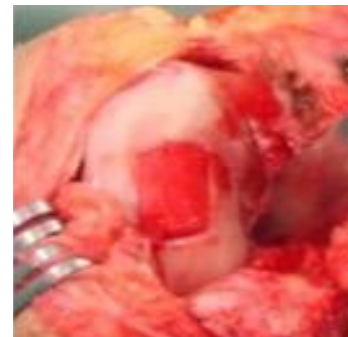
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Surgical technique

- 1- MINI-ARTHROTOMY
- 2- DEFECT PREPARATION
- 3- SCAFFOLD PRESS-FIT IMPLANTATION
- 4- FIBRIN GLUE TO IMPROVE STABILITY
- 5- TOURNIQUET RELEASE
- 6- LAYER CLOSURE

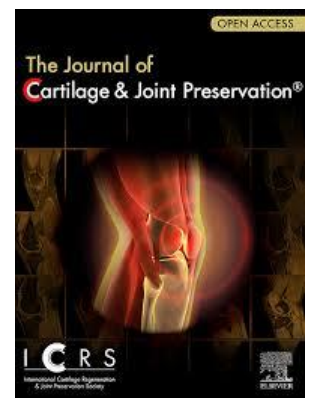


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Andriolo L, De Marziani L, Filardo G, et al. 2024

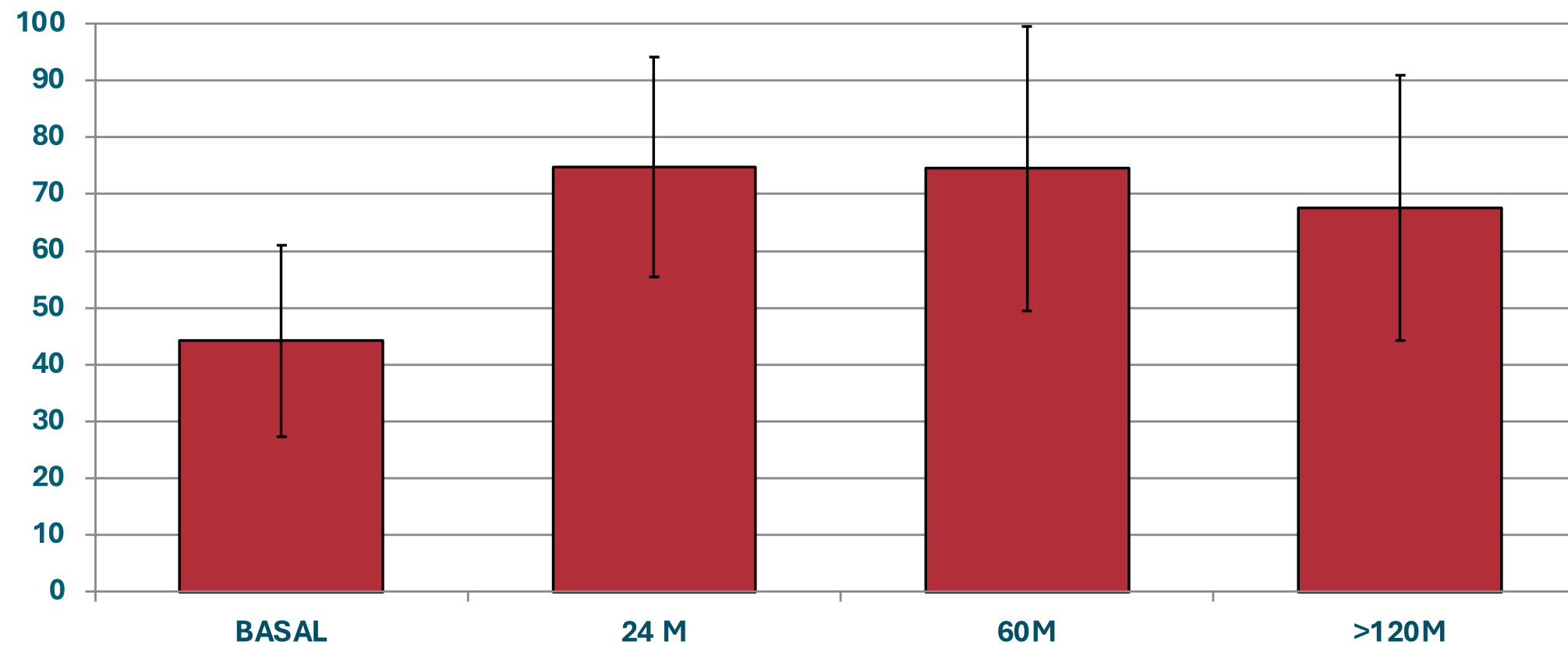


Results

SUBJECTIVE
IKDC SCORE



Statistically significant improvement from
baseline to all follow-up points ($p<0.005$)



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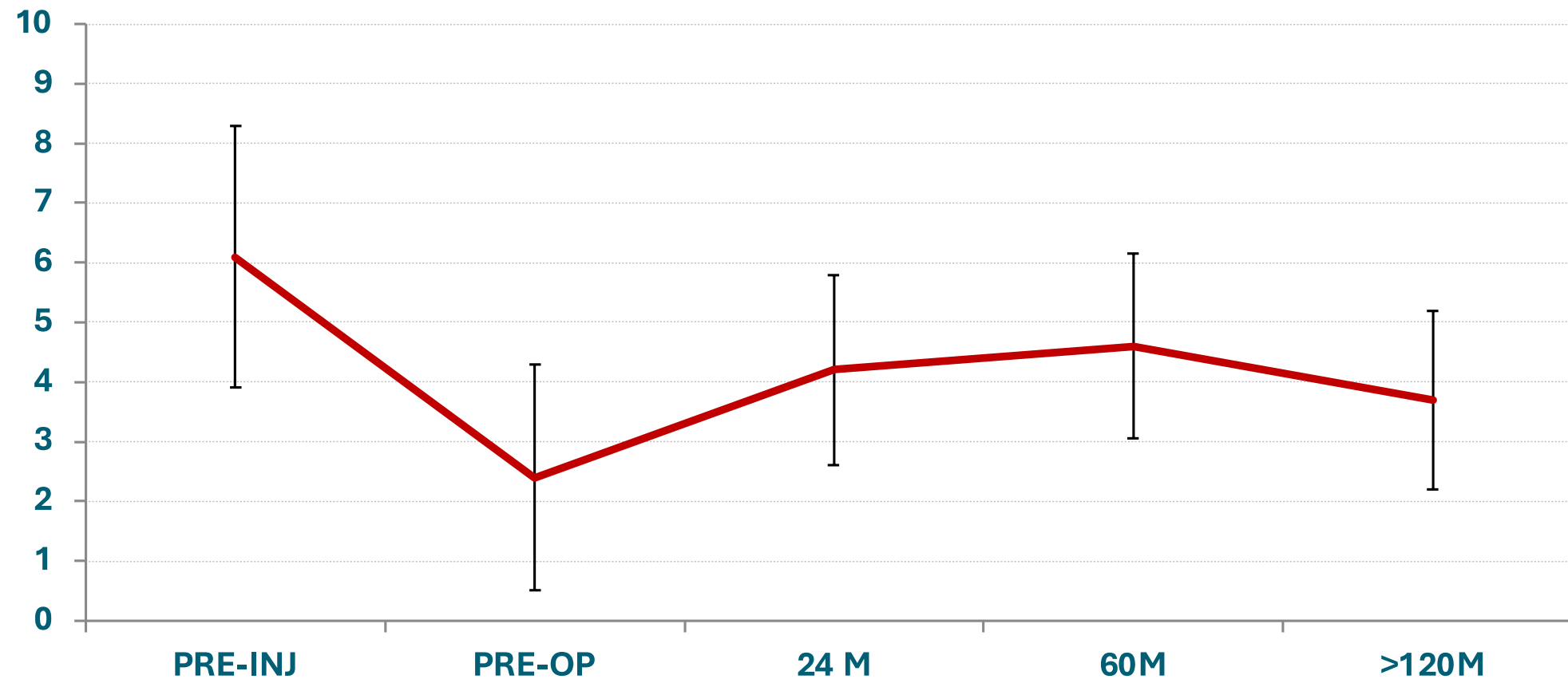
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Results

Statistically significant improvement from pre-operative to all follow-up points ($p < 0.005$)
without reaching pre-injury level



TEGNER
SCORE



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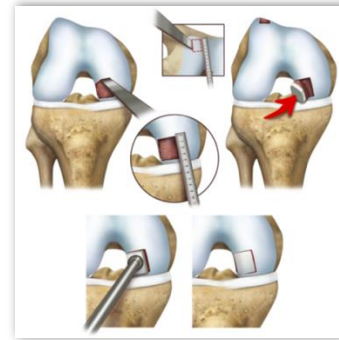
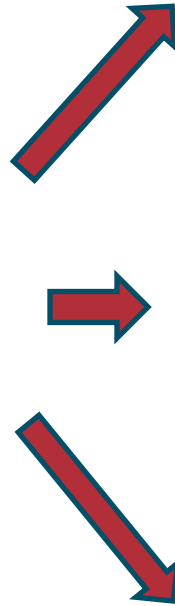
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Results

Failure rate > 10 years
10.7%



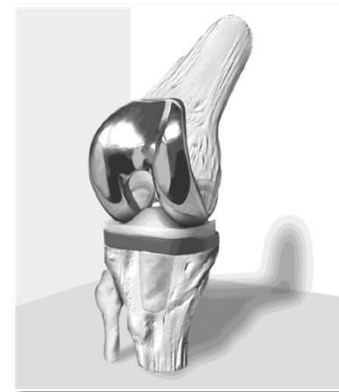
6 surgical failures



2 OAT



1 UKA



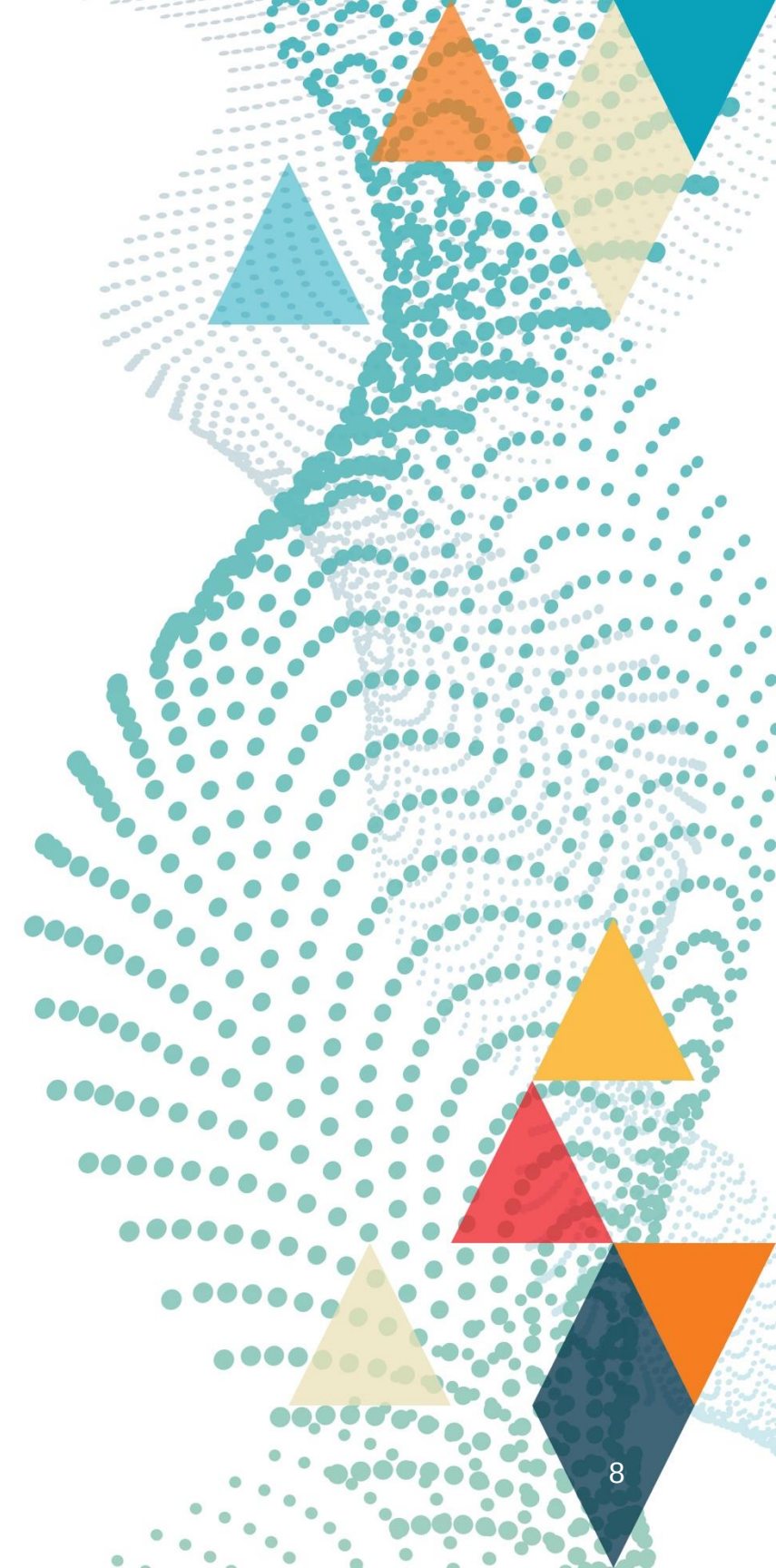
3 TKA



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Conclusions

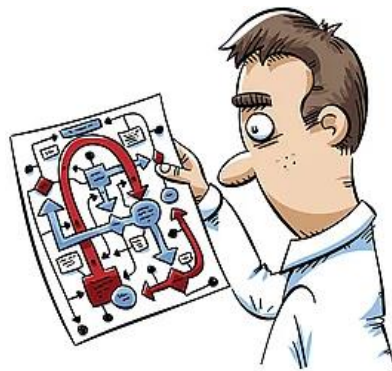
Osteochondral scaffold implantation
for chondral and osteochondral knee lesions



- ✓ Safe and effective one-step surgical procedure
- ✓ Good clinical results stable at long term follow-up
- ✓ Low failure rate



RESTORE THE OSTEOCHONDRAL UNIT



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