

## Comparison of therapies for superficial urinary bladder carcinomas

	IMMUCOTHEL® <sup>[1]</sup>	BCG <sup>[2,3]</sup>	Mitomycin C <sup>[3,4]</sup>
Type of therapy	Immunotherapy	Immunotherapy	Cytostatic agent
Field of application (bold print = recommended)	Ta-T1 (G1-G3), carcinoma in situ (CIS), at failure or contraindication of BCG	Ta ( <b>TaG3</b> ), <b>T1G1</b> , <b>T1G2</b> , <b>T1G3</b> , <b>CIS</b>	Recurrence prevention in adult patients with superficial urinary bladder carcinoma after transurethral resection <b>not recommended for high-risk tumors</b>
Exclusion criteria	<ul style="list-style-type: none"> <li>• Hypersensitivity to the active ingredient</li> <li>• Well-known general hypersensitivity to exogenous proteins</li> </ul>	<ul style="list-style-type: none"> <li>• Hypersensitivity to the active ingredient</li> <li>• Immunosuppression</li> <li>• Active tuberculosis</li> <li>• Bladder radiotherapy</li> <li>• Breastfeeding</li> <li>• TUR, bladder biopsy or traumatic catheter examination within the last 2–3 weeks</li> <li>• Bladder perforation</li> <li>• Acute infection of urinary tract</li> </ul>	<ul style="list-style-type: none"> <li>• Hypersensitivity to mitomycin C</li> <li>• Breastfeeding</li> <li>• Cystitis</li> <li>• Bladder wall perforation</li> </ul>
Probability of recurrence <sup>[5]</sup>	30 %	24 %	34 %
Five years free of disease <sup>[5]</sup>	17 %	37 %	9 %
Rate of progression <sup>[5]</sup>	10 %	10 %	14 %
Side effects (cystitis) <sup>[5]</sup>	5 %	54 %	40 %
Allergic reaction <sup>[5]</sup>	0 %	2 %	5 %
Therapy failure rate <sup>[5]</sup>	1 %	20 %	17 %
Handling	<ul style="list-style-type: none"> <li>• <b>No special personal or product protection required</b></li> <li>• <b>Simple handling</b></li> </ul>	<ul style="list-style-type: none"> <li>• Closed instillation system required</li> <li>• Re-suspension under aseptic conditions</li> <li>• Skin contact with BCG must be avoided</li> <li>• The use of gloves is recommended</li> </ul>	<ul style="list-style-type: none"> <li>• Closed instillation system required</li> <li>• Gloves, protective mask, protective clothing</li> <li>• Air exhaust if possible</li> <li>• Essential to avoid contact with skin and mucosa</li> </ul>
Disposal	Residual waste	Infectious waste	Cytotoxic waste (transport of hazardous goods)

## Summary of the most important aspects

IMMUCOTHEL® is approved as immunotherapy for the prevention of recurrent superficial bladder carcinoma (Tis, Ta-T1 (G1-G3)) after transurethral resection

IMMUCOTHEL® is approved for high-risk tumors as second-line treatment or in the event of failure or contraindication of BCG

Patients appreciate the advantage of comparable effectiveness with significantly fewer side effects compared to BCG therapy

IMMUCOTHEL® can be combined with one immediate instillation of chemotherapy, mostly Mitomycin C, as recommended in the EAU Guidelines

Standard therapy with a cytostatic agent or BCG cannot be used in all patients. Side effects, intolerances, or limited availability (BCG) can present limiting factors

In contrast to cytostatic agents and BCG, IMMUCOTHEL® can be prepared in ready-to-use form without special personal or product protection

The substance can be disposed of along with normal medical practice waste and does not fall under the cytostatic agent/CMR substance ordinance; this is a logistical advantage in daily medical practice routine

Additional information for KLH/IMMUCOTHEL®: [www.biosyncorp.com](http://www.biosyncorp.com), [www.biosynpharma.com](http://www.biosynpharma.com), [www.biosyn.de](http://www.biosyn.de)

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## Literature

- [1] [Summary of product characteristics IMMUCOTHEL®](#), biosyn Arzneimittel GmbH, May 2017.
- [2] [Summary of product characteristics BCG-medac Pulver und Lösungsmittel zur Herstellung einer Suspension zur intravesikalen Anwendung](#), medac GmbH, September 2015.
- [3] Babjuk M et al. Eur Urol. 2017 Mar; 71(3): 447-61. [EAU Guidelines on Non-Muscle-invasive Urothelial Carcinoma of the Bladder: Update 2016](#).
- [4] [Summary of product characteristics mito-medac® 20 mg Pulver und Lösungsmittel zur Herstellung einer Lösung zur intravesikalen Anwendung](#), medac GmbH, April 2018.
- [5] Detailed list of the literature in "IMMUCOTHEL® for recurrence prevention of superficial urinary bladder carcinomas" at [www.biosynpharma.com/oncology/hemocyanine-klh-bladder-cancer](http://www.biosynpharma.com/oncology/hemocyanine-klh-bladder-cancer)

IMMUCOTHEL® 1 mg, powder for solution for injection / IMMUCOTHEL® 10 mg, powder for solution for intravesical use

**Active ingredient:** Immunocyanin. **Indications:** Prevention of bladder carcinoma recurrence after transurethral resection and after failure of established therapies for this indication. **Composition:** IMMUCOTHEL® 1 mg: 1 vial with 54.63 mg powder for injections contains 1 mg biotechnically obtained, chromatographically uniform, molecularly standardized immunocyanin. Each vial is accompanied by 1 ampoule with 1 ml solvent. IMMUCOTHEL® 10 mg: 1 vial with 546.3 mg powder for intravesical instillations contains 10 mg of biotechnically obtained, chromatographically uniform, molecularly standardized immunocyanin. Each vial is accompanied by 1 ampoule with 10 ml solvent. **Excipients:** Powder: Glycine, sodium hydroxide, sodium chloride, sucrose. **Solvent:** Water for injections. **Contra-indications:** Immunosuppression. Known hypersensitivity to proteins foreign to the body. **Undesirable effects:** *Hepatobiliary disorders:* Rare (≥ 1/10,000 to < 1/1,000): increase of γ-glutamyl transferase and of glutamate pyruvate transaminase. *Renal and urinary disorders:* Rare (≥ 1/10,000 to < 1/1,000): Urgency, feeling of pressure or pain. Not known (cannot be estimated from the available data): Allergic reactions of the bladder manifesting as sterile leukocyturia. *General disorders and administration site conditions:* Uncommon (≥ 1/1,000 to < 1/100): Subfebrile temperatures are sometimes reported but are reversible after 3 days. **Interactions:** Specific interactions were not observed. The immunostimulating effect of IMMUCOTHEL® may be impaired by concurrent immunosuppressive radio- or chemotherapy or by simultaneous administration of corticosteroids. **Packages:** IMMUCOTHEL® 1 mg/10 mg: 1 vial of 1 mg/10 mg immunocyanin and 1 ampoule with 1 ml/10 ml solvent. Subject to prescription

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