

CELLCOAT® – Protein Coated Cell Culture Vessels

The Greiner Bio-One CELLCOAT® product line comprises cell culture vessels which are coated with proteins of the extracellular matrix (ECM) or synthetic proteins (Poly-D- and Poly-L-Lysine). Besides an improved adhesion and proliferation of primary cells and various cell lines, CELLCOAT® plates are highly suitable for serum-free and serum-reduced cell cultivation and experiments which include additional washing steps or stressful procedures, e.g. transfection. Moreover, the differentiation of individual cell types can be enhanced through the protein-coating.

Applications:

- Improved adhesion
- Improved cell proliferation
- Cell adhesion assays
- Receptor-ligand binding studies
- Reduced-serum or serum-free cultivation
- Improved growth of primary cells
- Differentiation of individual cell types

Advantages:

- Increase in isolation and cultivation efficiency
- Ready-to-use products: immediate use, time-saving
- Consistent quality
- Collagen Type I and Poly-Lysine coated products storable at room temperature

CELLCOAT® products are produced under the highest purity and manufacturing standards according to validated procedures and established protocols. Consistent quality of the raw material and of the biological activity of the coating is ensured by conducting strict controls.

A protein coating of the growth surfaces with for example Poly-D-Lysine can improve the adhesion of the cells (Fig. 1).

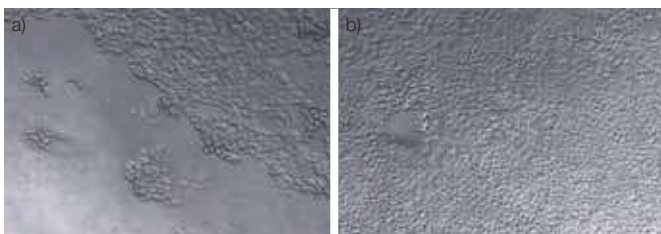


Figure 1:

- a) HEK 293 cells 48 h after seeding and single washing with PBS on an uncoated, TC-treated surface
- b) HEK 293 cells 48 h after seeding and single washing with PBS on a surface coated with Poly-D-Lysine

Improvement in isolation and cultivation efficiency can be achieved through proteins of the extracellular matrix, such as Collagen Type I (Fig. 2 and Fig. 3).

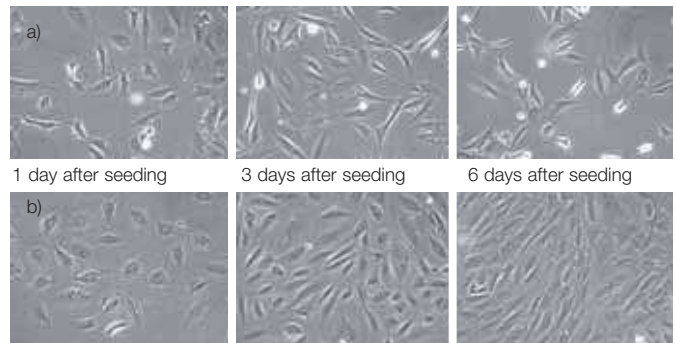


Figure 2: Comparison of the proliferation of human endothelial cells from the umbilical vein (HUVEC) on a) TC-treated surfaces and b) surfaces coated with Collagen Type I

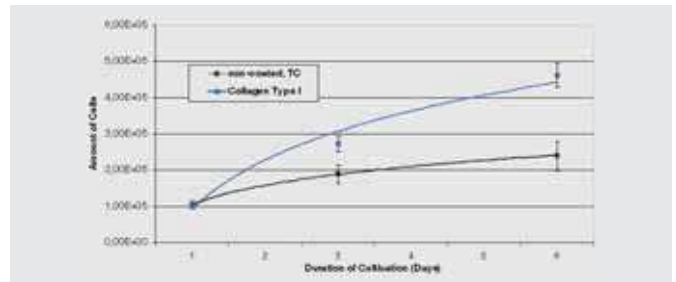


Figure 3: Comparison of the proliferation of human endothelial cells from the umbilical vein (HUVEC) on TC-treated surfaces and surfaces coated with Collagen Type I



Upon request additional CELLCOAT® cell culture vessels are available with Collagen-I-, Poly-D-Lysine- and Poly-L-Lysine-coating. Greiner Bio-One can also provide Laminin- and Fibronectin-coated CELLCOAT® cell culture vessels upon request.

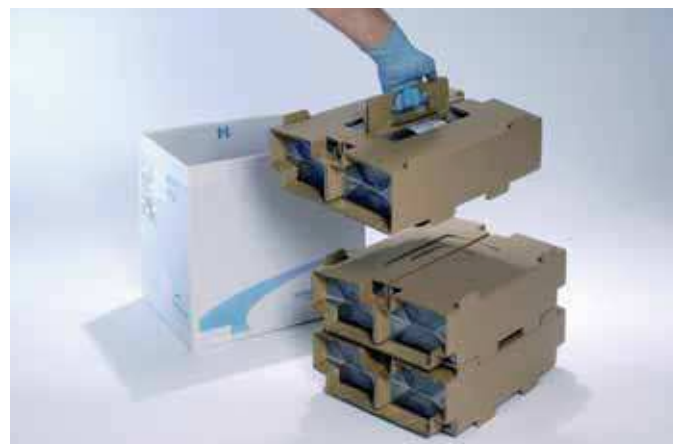


Figure 4: User-friendly bulk packaging



For selected CELLCOAT® products, Greiner Bio-One also offers user-friendly bulk packaging (Fig. 4)

Collagen Type I CELLCOAT®

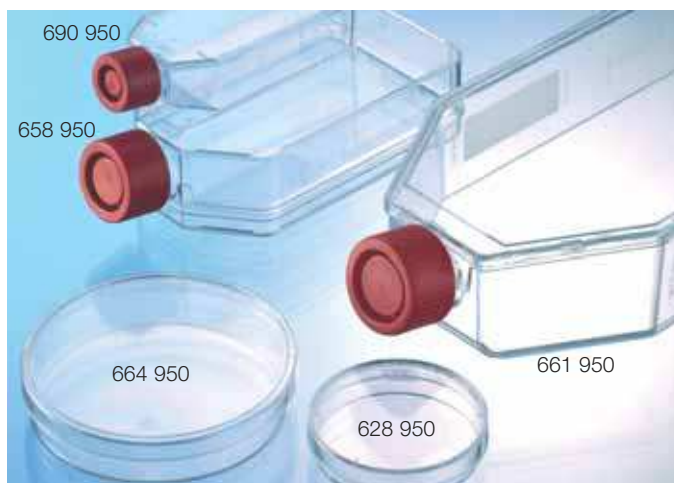
Collagen Type I is a protein of the extracellular matrix, an intercellular substance which *in vivo* influences adhesion, migration and proliferation among other processes. *In vivo* Collagen Type I is primarily found in the skin, tendon and bone. Collagen Type I represents one of the most important ECM proteins for *in vitro* cell cultures. Many otherwise difficult-to-cultivate cells adhere to Collagen Type I and show a positive growth behaviour (Fig.1). For certain cell lines Collagen Type I also has an influence on differentiation and morphology.

- Promotion of cell adhesion, proliferation and growth of endothelial cells, hepatocytes, muscle cells, pheochromocytoma cells (PC12) and other cell types
- Cell cultivation in serum-free or serum-reduced medium
- Rat tail Collagen Type I
- Quality control: promotion of the adhesion and proliferation of human fibrosarcoma cells



Figure 1: Human umbilical cord endothelial cells (HUVEC) on Collagen Type I CELLCOAT®, 4 days after seeding.


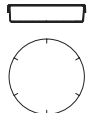



If you have any questions regarding literature or other cell types, please do not hesitate to contact us.



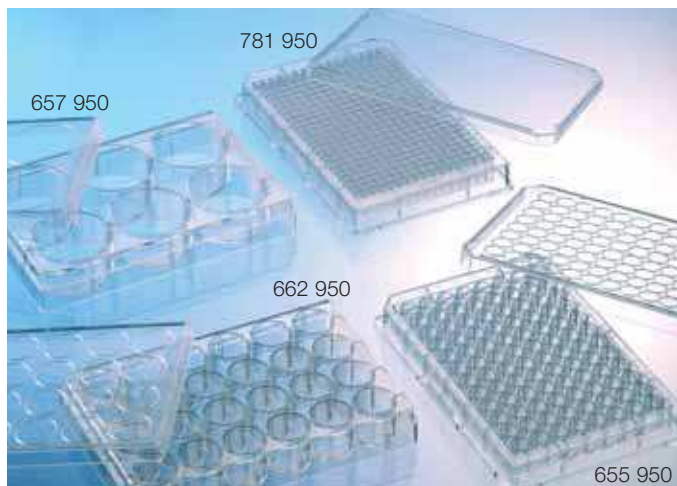
Collagen Type I CELLCOAT® Cell Culture Dishes / Flasks

▶ Cell Culture Vessels p. 1 | 4 ff.

Further cell culture vessels coated with Collagen Type I are available on request.

					
Cat.-No.	628 950	664 950	690 950	658 950	661 950
Description	dish	dish	flask	flask	flask
ø [mm] x height [mm]	60 x 15	100 x 20	-	-	-
Growth area [cm²]	21	58	25	75	175
Max. volume [ml]	17	70	50	250	650
Working volume [ml]	6 – 7	16 – 17	5 – 10	15 – 38	20 – 85
Protein coating	Collagen Type I	Collagen Type I	Collagen Type I	Collagen Type I	Collagen Type I
Quantity per bag/case	20/100	10/40	10/50	5/50	5/40

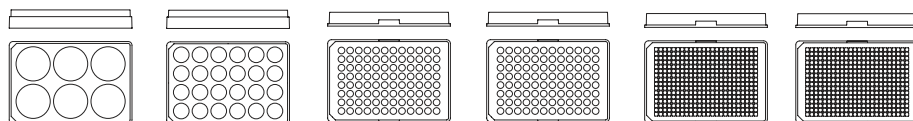
1 Cell/Tissue Culture
2 HTS-Microplates
3 Immunology/HLA
4 Microbiology/Bacteriology
5 Tubes/Multi-Purpose Beakers
6 Liquid Handling
7 Molecular Biology
8 Protein Crystallisation
9 Separation
10 Biochips/Microfluidics
11 Cryo-Technics
12 Lids/Sealers/Cap Mats
13 Reaction Tubes/Analyser Cups
14 Accessories



Collagen Type I CELLCOAT® Cell Culture Multiwell Plates Cell Culture Microplates

- ▶ Cell Culture Microplates p. 1 | 14 ff.
- ▶ Cell Culture Multiwell Plates p. 1 | 13 ff.

Further cell culture vessels coated with Collagen Type I are available on request.



Cat.-No.	657 950	662 950	655 950	655 956	781 950	781 956
Well format	6 well	24 well	96 well	96 well	384 well	384 well
Bottom	solid	solid	solid	µClear®	solid	µClear®
Colour	clear	clear	clear	black	clear	black
Growth area per well [cm ²]	9.6	1.9	0.34	0.34	0.11	0.11
Max. volume [ml]	16.1	3.3	0.392	0.392	0.138	0.138
Working volume [ml]	2 – 5	0.5 – 1	0.025 – 0.34	0.025 – 0.34	0.01 – 0.13	0.01 – 0.13
Protein coating	Collagen Type I	Collagen Type I	Collagen Type I	Collagen Type I	Collagen Type I	Collagen Type I
Lid	+	+	+	+	+	+
Quantity per bag/case	5/50	5/50	5/20	5/20	5/20	5/20

Poly-Lysine CELLCOAT®

Poly-D-Lysine (PDL) and Poly-L-Lysine (PLL) are synthetic molecules that are used to improve the adhesion of different cell types to polystyrene surfaces (Fig. 1). Especially when serum-free or serum-reduced medium is used or when experiments such as transfections are performed, the cultivation efficiency of individual cell lines can be improved. As synthetic molecule Poly-D-Lysine is free of impurities carried by other proteins.

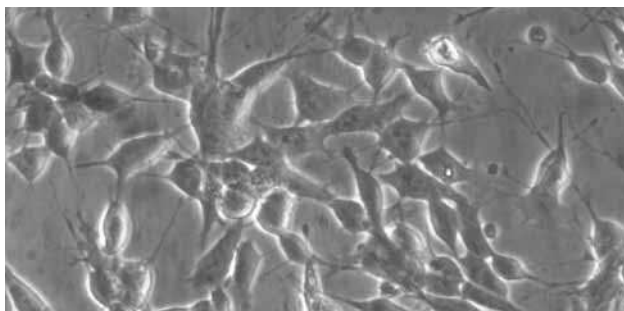
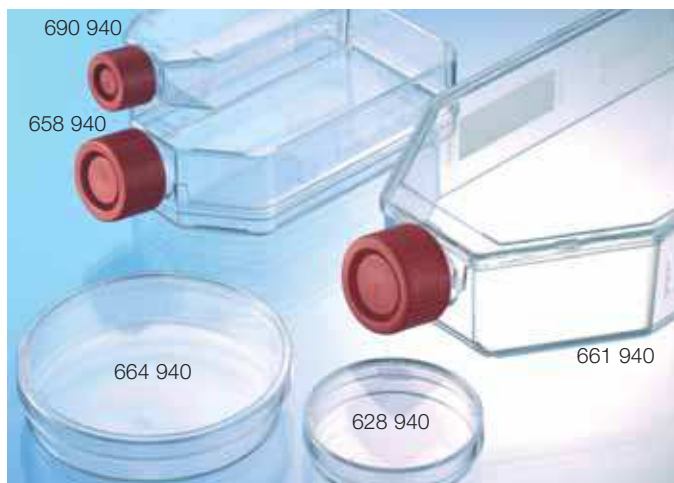


Figure 1: Cells of a neuroblastoma cell line on PDL CELLCOAT®, 24 hours after seeding.

- Reduced-serum or serum-free cultivation
- Cell differentiation and neuron growth
- Promotion of cell adhesion, proliferation and growth of transfected cell lines (e.g. HEK-293, PC12, L929, certain 3T3 cell lines), neuronal cell lines, as well as primary neurons and glia cells
- Synthetic proteins
- Molecular weight PDL: 75 – 150 kD; PLL: 30 – 70 kD
- Quality control: promotion of the adhesion of RCG cells (rat neurons from the cerebellum) resp. of neuroblastoma cell line


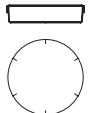


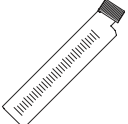
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Poly-D-Lysine CELLCOAT® Cell Culture Dishes / Flasks

▶ Cell Culture Vessels p. 1 | 4 ff.

Further cell culture vessels coated with Poly-D-Lysine are available on request.

					
Cat.-No.	628 940	664 940	690 940	658 940	661 940
Description	dish	dish	flask	flask	flask
ø [mm] x height [mm]	60 x 15	100 x 20	-	-	-
Growth area [cm ²]	21	58	25	75	175
Max. volume [ml]	17	70	50	250	650
Working volume [ml]	6 – 7	16 – 17	5 – 10	15 – 38	20 – 85
Protein coating	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine
Quantity per bag/case	20/100	10/40	10/50	5/50	5/40

1 Cell/
Tissue Culture

2 HTS-
Microplates

3 Immunology/
HLA

4 Microbiology/
Bacteriology

5 Tubes/Multi-
Purpose Beakers

6 Liquid
Handling

7 Molecular
Biology

8 Protein
Crystallisation

9 Separation

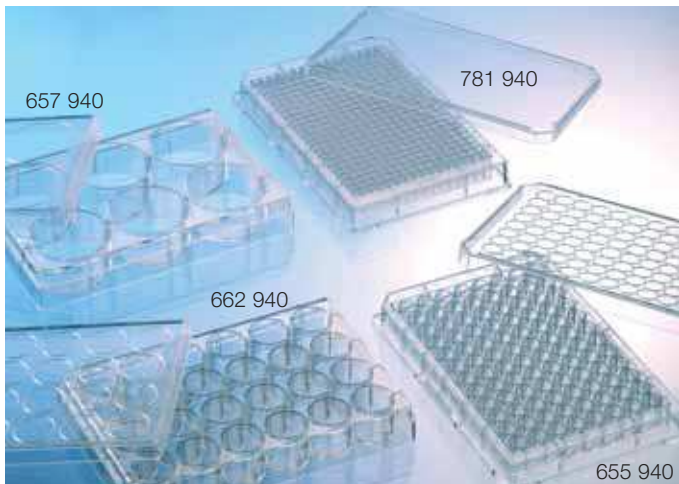
10 Biochips/
Microfluidics

11 Cryo-
Technics

12 Lids/Sealers/
Cap Mats

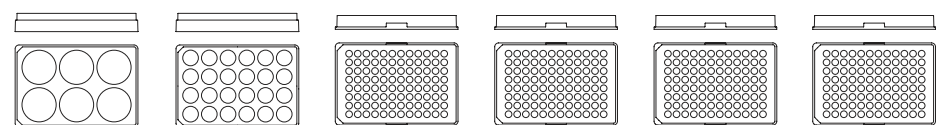
13 Reaction Tubes/
Analyser Cups

14 Accessories

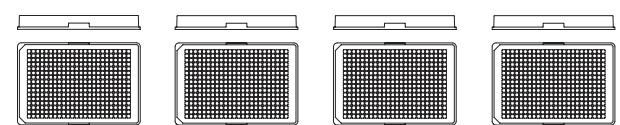


Poly-D-Lysine CELLCOAT® Cell Culture Multiwell Plates Cell Culture Microplates

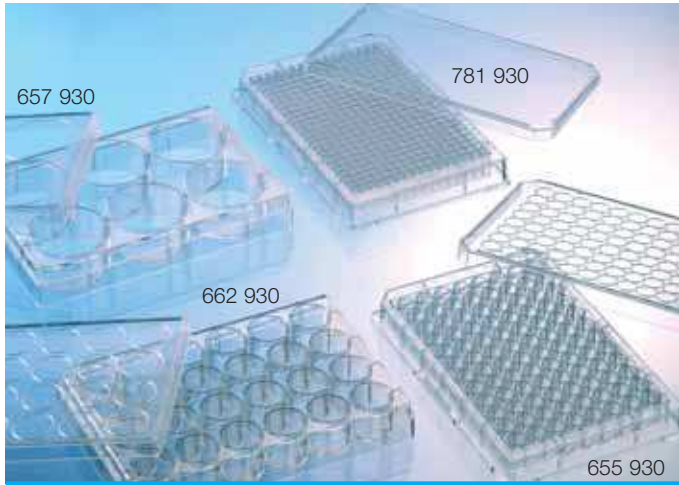
- ▶ Cell Culture Microplates p. 1 | 14 ff.
- ▶ Cell Culture Multiwell Plates p. 1 | 13
- Further cell culture vessels coated with Poly-D-Lysine are available on request.
- Cat.-No. 781 948 has a user-friendly bulk package (→ p. 1 | 14)



Cat.-No.	657 940	662 940	655 940	655 944	655 946	655 948
Well format	6 well	24 well	96 well	96 well	96 well	96 well
Bottom	solid	solid	solid	µClear®	µClear®	µClear®
Colour	clear	clear	clear	white	black	black
Growth area per well [cm²]	9.6	1.9	0.34	0.34	0.34	0.34
Max. volume [ml]	16.1	3.3	0.392	0.392	0.392	0.392
Working volume [ml]	2 – 5	0.5 – 1	0.025 – 0.34	0.025 – 0.34	0.025 – 0.34	0.025 – 0.34
Protein coating	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine
Lid	+	+	+	+	+	+
Quantity per bag/case	5/50	5/50	5/20	5/20	5/20	20/120



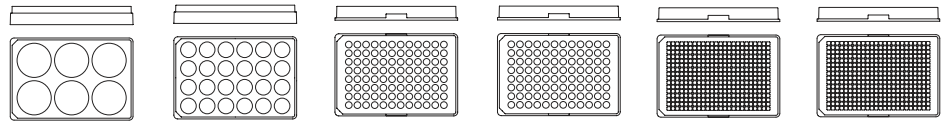
Cat.-No.	781 940	781 944	781 946	781 948
Well format	384 well	384 well	384 well	384 well
Bottom	solid	µClear®	µClear®	µClear®
Colour	clear	white	black	black
Growth area per well [cm²]	0.11	0.11	0.11	0.11
Max. volume [ml]	0.138	0.138	0.138	0.138
Working volume [ml]	0.01 – 0.13	0.01 – 0.13	0.01 – 0.13	0.01 – 0.13
Protein coating	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine	Poly-D-Lysine
Lid	+	+	+	+
Quantity per bag/case	5/20	5/20	5/20	20/120



Poly-L-Lysine CELLCOAT®
Cell Culture Dish
Cell Culture Multiwell Plates
Cell Culture Microplates

- ▶ Cell Culture Microplates p. 1 | 14 ff.
- ▶ Cell Culture Multiwell Plates p. 1 | 13

Further cell culture vessels coated with Poly-L-Lysine are available on request.



Cat.-No.	657 930	662 930	655 930	655 936	781 930	781 936
Well format	6 well	24 well	96 well	96 well	384 well	384 well
Bottom	solid	solid	solid	µClear®	solid	µClear®
Colour	clear	clear	clear	black	clear	black
Growth area per well [cm²]	9.6	1.9	0.34	0.34	0.11	0.11
Max. volume [ml]	16.1	3.3	0.392	0.392	0.138	0.138
Working volume [ml]	2 – 5	0.5 – 1	0.025 – 0.34	0.025 – 0.34	0.01 – 0.13	0.01 – 0.13
Protein coating	Poly-L-Lysine	Poly-L-Lysine	Poly-L-Lysine	Poly-L-Lysine	Poly-L-Lysine	Poly-L-Lysine
Lid	+	+	+	+	+	+
Quantity per bag/case	5/50	5/50	5/20	5/20	5/20	5/20

Cat.-No.	628 930
Description	dish
ø [mm] x height [mm]	60 x 15
Growth area [cm²]	21
Max. volume [ml]	17
Working volume [ml]	6 - 7
Protein coating	Poly-L-Lysine
Quantity per bag/case	20/100