

Contents

1	Structure of Transglutaminases: Unique Features Serve Diverse Functions	1
	Máté Á. Demény, Ilma Korponay-Szabó, and László Fésüs	
2	Control of TG Functions Depending on Their Localization	43
	Yutaka Furutani and Soichi Kojima	
3	Preferred Substrate Structure of Transglutaminases	63
	Kiyotaka Hitomi and Hideki Tatsukawa	
4	Insights into Transglutaminase 2 Function Gained from Genetically Modified Animal Models	83
	Siiri E. Iismaa	
5	Transglutaminase in Invertebrates	117
	Toshio Shibata and Shun-ichiro Kawabata	
6	A New Integrin-Binding Site on a Transglutaminase-Catalyzed Polymer	129
	Yasuyuki Yokosaki	
7	Transglutaminase 2-Mediated Gene Regulation	153
	Soo-Youl Kim	
8	The Role of Transglutaminase Type 2 in the Regulation of Autophagy	171
	Manuela D'Eletto, Federica Rossin, Maria Grazia Farrace, and Mauro Piacentini	
9	Transglutaminase 2 and Celiac Disease	193
	Rasmus Iversen and Ludvig M. Sollid	
10	Transglutaminase II and Metastasis: How Hot Is the Link?	215
	Kapil Mehta	

11 Transglutaminases: Expression in Kidney and Relation to Kidney Fibrosis	229
Elisabetta A.M. Verderio, Giulia Furini, Izhar W. Burhan, and Timothy S. Johnson	
12 Transglutaminases in Bone Formation and Bone Matrix Stabilization	263
Cui Cui and Mari T. Kaartinen	
13 Transglutaminases and Neurological Diseases	283
Julianne Feola, Alina Monteagudo, Laura Yunes-Medina, and Gail V.W. Johnson	
14 Regulation of Transglutaminase 2 by Oxidative Stress	315
Eui Man Jeong and In-Gyu Kim	
15 Blood Coagulation Factor XIII: A Multifunctional Transglutaminase	333
Moyuru Hayashi and Kohji Kasahara	
16 Inhibition of Transglutaminase	347
Jeffrey W. Keillor	
17 Substrate Engineering of Microbial Transglutaminase for Site-Specific Protein Modification and Bioconjugation	373
Noriho Kamiya and Yutaro Mori	
Index	385

Transglutaminases

Multiple Functional Modifiers and Targets for New Drug Discovery

Hitomi, K.; Kojima, S.; Fesus, L. (Eds.)

2015, VIII, 391 p. 85 illus., 37 illus. in color., Hardcover

ISBN: 978-4-431-55823-1