Supplementary Information A.

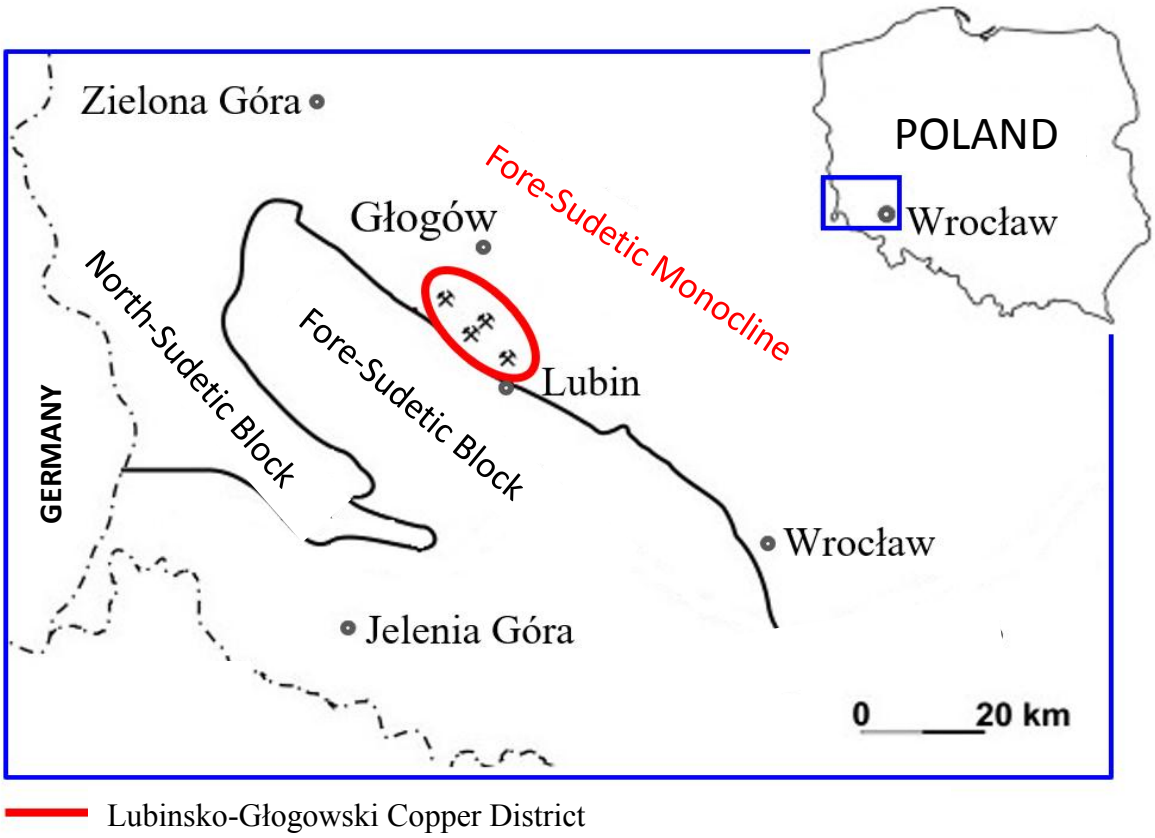

Figure S1. Localization of Fore-Sudetic Monocline and Lubinsko-Głogowski Copper District (red circle)

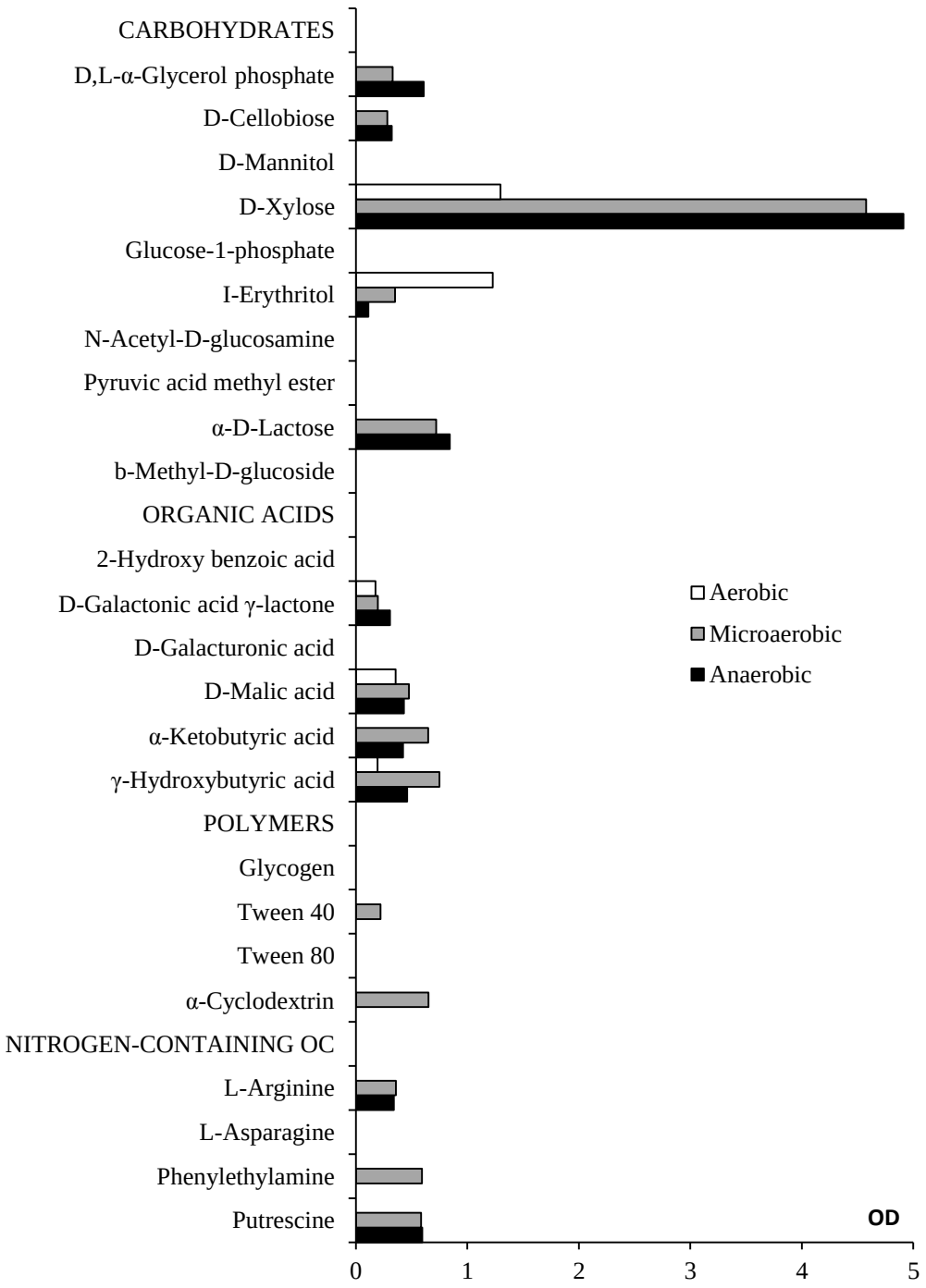

Figure S2. Metabolic activity of microorganisms inhabiting shale rock enriched in kerogen III under aerobic, microaerophilic and anaerobic conditions; the optical density (OD) values correspond to the degradation intensity of organic compounds; OC – organic compounds

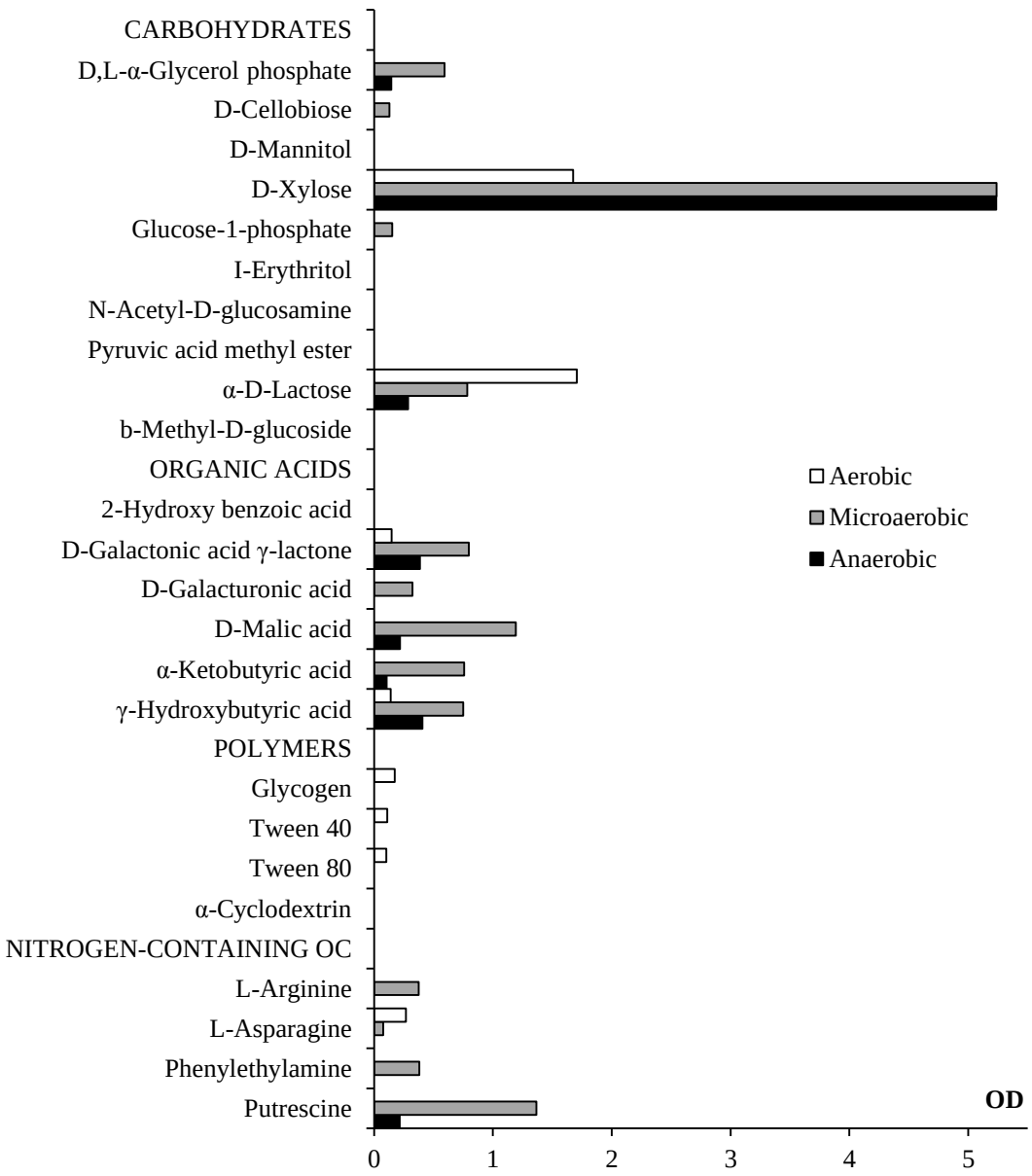

Figure S3. Metabolic activity of microorganisms inhabiting shale rock enriched in kerogen IV.1 under aerobic, microaerophilic and anaerobic conditions; the optical density (OD) values correspond to the degradation intensity of organic compounds; OC – organic compounds

Figure S4. Metabolic activity of microorganisms inhabiting shale rock enriched in kerogen IV.2 under aerobic, microaerophilic and anaerobic conditions; the optical density (OD) values correspond to the degradation intensity of organic compounds; OC – organic compounds

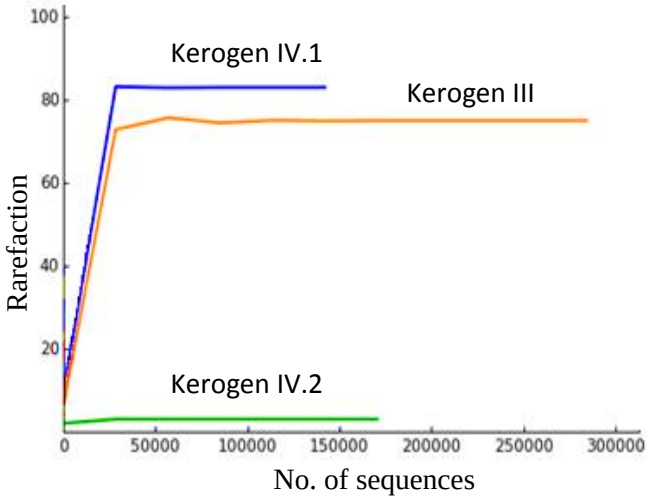

Figure S5. Rarefaction curve of 16S rDNA sequencing of three samples (kerogen III, IV.1 and IV.2)

Table S1. Characteristics of research stands where shale rock samples were collected

Parametr	**Research stand**				
	Stand 1	**Stand 1**	**Stand 3**	**Stand 4**	**Stand 5**
Depth (m)	600	650	700	780	650
Temperature	22	23	26	22	25
Pressure (hPa)	1044	1065	1080	1070	1067