Handbook of Biochemistry and Molecular Biology

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Nucleic Acids – Volume II

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Nucleic Acids

GUANINE-PLUS-CYTOSINE (GC) COMPOSITION OF THE DNA OF BACTERIA, FUNGI, ALGAE AND PROTOZOA

Dr. William M. Normore

The table of bacteria (Table 1) is divided into seven columns. In column 1, the bacteria are listed alphabetically by families, with subdivisions for genera and species; alternate generic or species names are given in parentheses. In general, *Bergey's Manual of Determinative Bacteriology*[1] has been followed for classification, but Skerman's *A Guide to the Identification of the Genera of Bacteria*[2] and original papers were used in placing organisms not listed in *Bergey's Manual*. In column 2, the source of the organism and its strain designation have been given where possible. In columns 3, 4, and 5, the mole percent quanisine-plus-cytosine values are given to the nearest 0.1%. Where ranges of values under any one method are listed, or where there are discrepancies between methods, the original papers should be consulted. The primary references for GC values are given in column A, while column B gives references to hybridization data on the same organisms. An alphabetized index of the genera precedes this table.

The tables for fungi, algae and protozoa (Tables 2, 3, and 4) are similarly arranged, except that column 1 lists the genera in alphabetical order.

The literature survey was concluded in May 1971.

INDEX TO GENERA

INDEX TO GENERA (continued)

INDEX TO GENERA (continued)

INDEX TO GENERA (continued)

Table 1
GC COMPOSITION OF THE DNA OF BACTERIA

Organism	Source of Strain[a]	Mole % Guanosine + Cytosine[b]			References[c]	
		Tm	Chemical Analysis	Buoyant Density	A	B
Achromobacteriaceae						
1. *Achromobacter*						
agilis	NCIB 9986	67.6			171	
albus	NCIB 9988	61.8			171	
anitratus	ATCC 17912	42			172	172
	ATCC 17913	43			172	172
	8, 9			39.5	3	
aquamarinus	NCMB 557	58.0			171	
arsenoxydans	NCIB 8687	59.4			171	
butyri	NCIB 9404	60.5			171	
citroalcaligenes	2723/59, ATCC 17908			40–41	4	
	ATCC 17908	42			172	172
conjunctivae	ATCC 17905	44			172	172
cycloclastes	IAM 1013	62.1			171	
	CRM ACY	64.2			171	
fischeri			40–42		5	
				44±1	228	
formosus	NCIB 9987	61.5			171	
georgiopolitanum	COC 21			41±1	173	
haemolysans	742/56			45.0	3	
	2408/57			41.5	3	
	2181/60, ATCC 17907			39.5	3	
	ATCC 17988			41.0	3	
haemolyticus	ATCC 17907	43			172	172
	ATCC 17906	43			172	172
halophilus	AHU 1333	61.0			171	
hartlebii	NCIB 8129	63.5			171	
iophagus	NCMB 1051	64.8			171	
liquefaciens	W. Tulecke			41.0	6	
	ATCC 15716	44.6			171	
	NCIB 9989	66.0			171	

Table 1 (continued)
GC COMPOSITION OF THE DNA BACTERIA

Organism	Source of Strain[a]	Mole % Guanosine + Cytosine[b]			References[c]	
		Tm	Chemical Analysis	Buoyant Density	A	B
Achromobacteriaceae (continued)						
Achromobacter						
lwoffi	ATCC 17985			43.0	3	
	ATCC 17987			43.5	3	
	881/57			41.5	3	
	8858/62			38.0	3	
metalcaligenes	ATCC 17905	44			172	172
	ATCC 17910	46			172	172
mucosus	ATCC 17904	42			172	172
turbidus	AHU 1337	55.6			171	
venosus	NCIB 9985	61.8			171	
viscosus	NCIB 9408	61.2			171	
species	NCIB 9650	55.9			171	
	Pickett M153	56.6			171	
	Pickett M165	56.9			171	
	Pickett M140	58.1			171	
	Pickett M151	58.0			171	
	Pickett M155	58.0			171	
	Pickett M281	68.1			171	
	Pickett M250	67.7			171	
	NCIB 9387	68.2			171	
	NCMB 1156	56.7			171	
	NCMB 622	58.2			171	
	NCMB 623	58.5			171	
	NCMB 625	58.8			171	
	NCMB 624	59.1			171	
	Pickett M 25	62.0			171	
	Pickett M 22	62.0			171	
	Henderson H 38	62.1			171	
	Pickett M 6	62.2			171	
	NCIB P 18/2	62.8			171	
	NCIB P917/53	63.2			171	

Table 1 (continued)
GC COMPOSITION OF THE DNA OF BACTERIA

Organism	Source of Strain[a]	Mole % Guanosine + Cytosine[b] Tm	Chemical Analysis	Buoyant Density	References[c] A	B
Achromobacteriaceae (continued)						
Achromobacter						
species	NCIB P 18/27	65.0			171	
	Pickett M 185	66.8			171	
	N 4-B	59.4	60.8		174	
2. *Alcaligenes*						
denitrificans	CIP 60.81	65.4			171	
	CIP 60.83	66.7			171	
	CIP 6230	68.9			171	
	CIP X86	69.2			171	
	CIP X73	69.8			171	
faecalis	ATCC 8750, NCIB 8156	54.8		54.8	7	
	3 strains		66.7–69.9		8	
	NCTC 8764			66.0	9	
	NCTC 8769			63.0	9	
	Cs 8			63.5	9	
	Cs 11			63.0	9	
		62.0			10	
	40	58.8			11	
	41	58.8			11	
	NCTC 415, ATCC 19018	58.9			11	
	ATCC 8455			57.1	12	
	CIP 6415	58.4			171	
	Pinter 40	58.7			171	
	Pinter 41	58.8			171	
	Delft AF1	58.9			171	
	ATCC 19018	58.9			171	
	NCIB 8156	58.9			171	
	CIP 60.57	63.9			171	
	CIP R40	64.9			171	
	Holding Cs 8	65.5			171	
	Holding Cs 11	65.6			171	
	CIP 62.31	65.0			171	
	CIP R161	56.5			171	
	Lautrop AB 78	57.9			171	
hemolysans	ATCC 17988	44			172	172
metalcaligenes	NCIB 8734	60.6			171	
odorans	Lautrop AB 60	56.8			171	
	CCEB 554	56.6			171	

Table 1 (continued)
GC COMPOSITION OF THE DNA OF BACTERIA

Organism	Source of Strain[a]	Mole % Guanosine + Cytosine[b]			References[c]	
		Tm	Chemical Analysis	Buoyant Density	A	B
Achromobacteriaceae (continued)						
Alcaligenes						
odorans	Gilardi 79	57.0			171	
	CCEB 583	57.0			171	
	Gilardi 29	57.1			171	
	CCEB 568	57.2			171	
	Gilardi 115	57.4			171	
	Gilardi 116	57.4			171	
	Gilardi 142	57.6			171	
	CCEB 569	57.7			171	
	Lautrop AB 209	57.9			171	
	Gilardi 117	57.9			171	
	Lautrop AB 373	58.1			171	
	Lautrop AB 1246	58.2			171	
	Mitchell 6	58.3			171	
	Mitchell 1	58.4			171	
	Mitchell 5	58.4			171	
	Lautrop AB 54	58.4			171	
	Lautrop AB 1157	58.4			171	
	Mitchell 4	58.5			171	
	Mitchell 2	58.6			171	
	Mitchell 3	58.6			171	
	Lautrop AB 1472	58.6			171	
species	Lautrop AB 1286	57.2			171	
	Lautrop AB 220	57.5			171	
	Lautrop AB 1289	57.8			171	
	Lautrop AB 1199	57.9			171	
	Lautrop AB 1347	58.1			171	
	Lautrop AB 1194	58.0			171	
	Lautrop AB 1350	58.2			171	
	Lautrop AB 1258	58.4			171	
	Lautrop AB 1367	58.4			171	
	Caselitz AF 61	60.0			171	
	Lautrop AB 374	68.6			171	