

**TABLE 6.1** Family of Genes in Human Osteoblasts Expressed by the Ionic Dissolution Products (Jell and Stevens, 2006; Hoppe et al., 2011; Boccaccini and Blaker, 2005; Laquerriere et al., 2003; Christodoulou et al., 2005)

Gene Family Name	Genes	Expression (%)
Extracellular matrix compounds (activation)	Bone proteoglycan II precursor	200
	Matrix metalloproteinase 14 (MMP14)	370
	Matrix metalloproteinase 2 (MMP2)	270
	Matrix metalloproteinase 1 inhibitor precursor (TIMP1)	220
	TIMP2	220
Growth factors and cytokines (activation)	Bone-derived growth factors	200
	Vascular endothelial growth factor (VEGF)	200
	Insulin like growth factor II (IGF-II)	300
	Macrophage specific colony stimulating factor (MCSF)	260
DNA synthesis repair and recombination (upregulation)	Replication factor C38 kDa (RFC38)	200
	DNA exclusion repair protein (ERCC)	300
	mut L protein homolog	300
	High mobility group protein (HMG-1)	230
Apoptosis regulators (upregulation)	Deoxyribonuclease II (Dnase II)	160
	Defender against cell death I (DAD-I)	450
	Ca-dependent proteinase small subunit	410
Signal transduction molecules (activation)	MAP kinase activated protein kinase 2 (MAPKAP)	600
	ADP-ribosylation factor 1	200
	Dual specificity nitrogen activated protein kinase 2	200
Cell surface antigens and receptors (activation)	CD44 antigen hematopoietic from precursor	700
	N-Sam, fibroblast growth factor receptor-I	300
	Fibronectin receptor beta subunit	600
	Vascular cell adhesion protein precursor	200
Transcription factors and cell cycle regulator (activation)	Cyclin K	200
	RCL growth related c-myc responsive gene	500
	26S proteinase regulatory subunit 6A	400
	Cyclin-dependent kinase inhibitor 1 [CDKN1A]	350
	Cyclin-dependent kinase inhibitor 1 [CDKN1A]	240
	CAMP-dependent transcription factor (ATF-4)	400
	G1/S-specific cyclin D1 (CCND1)	400