

# Glossary

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### **Circadian clock**

A “circadian” clock or rhythm is an internally generated biochemical, physiological, or behavioral cycle encompassing an approximate 24 hours duration in an organism, which allows the organism to anticipate and prepare for precise and regular environmental changes.

### **Cardiac magnetic resonance spectroscopy**

Cardiac magnetic resonance spectroscopy is a specialized imaging technique associated with magnetic resonance imaging (MRI) that does not utilize ionizing radiation. It differs from MRI in that it actually provides biochemical information about the tissues of the human body in a non-invasive way, as opposed to only providing structural information with regards to the distribution of water and fat.

### **Melatonin**

Melatonin (5-methoxy-*N*-acetyltryptamine) is the major secretory product of the pineal gland, produced in abundance during the dark cycle. It is involved in the regulation of the circadian rhythm of various physiological processes including blood pressure.

### **MicroRNA**

Micro-RNAs are a class of highly conserved, endogenous, non-coding RNA molecules of approximately 22 nucleotides that silence gene expression at the post-transcriptional level by either promoting the

degradation of messenger RNA (mRNA), or inhibiting the translation of protein from mRNA by translational repression.

### **Plasminogen activator inhibitor type 1 (PAI-I)**

PAI-1 is a 50 kDa cytokine produced primarily by endothelial cells and adipocytes. PAI-I functions as the principal inhibitor of both tissue plasminogen activator (tPA) and urokinase plasminogen activator (uPA) by binding to the active sites of these enzymes and thereby preventing the cleavage of plasmin from plasminogen. PAI-I is therefore a negative regulator of the fibrinolytic system.

### **Rev-erb alfa**

Rev-erbA alpha is a nuclear receptor and transcriptional repressor that is highly expressed in the brain, skeletal muscle, liver, and adipose depots that participates in the development and regulation of circadian rhythms within these tissues.

### **Translational research**

A novel research paradigm viewed as a bidirectional spectrum of basic, clinical, and patient-oriented research that aims to facilitate the movement (i.e. translation) of discoveries from basic laboratory research to clinical trials to point-of-care patient applications. The bidirectional framework of translational research also facilitates feedback of clinical outcomes to guide basic research directions.