

## LIST OF TABLES

Table No.	Table caption	Page No.
1.	Effect of metformin on the plasma glucose level of normal and T2DM rats in OGTT.	22
2.	Effect of metformin on the plasma glucose level of normal and T2DM rats in ITT.	22
3.	Effect of metformin on body weight, fasting blood glucose and insulin level, HOMA-IR and HOMA-B indices of normal and T2DM rats.	22
4.	Effect of metformin on the levels of TC, TG, HDL and LDL of normal and T2DM rats.	23
5.	Effect of metformin on Na <sup>+</sup> -K <sup>+</sup> -ATPase and Mg <sup>2+</sup> -ATPase activity in liver and pancreas of both normal and T2DM rats.	23
6.	Effect of metformin on activity of mitochondrial complex-I, II, IV and V, and the level of MMP in liver and pancreas of both normal and T2DM rats.	24
7.	Effect of metformin on mitochondrial levels of NO and LPO, and activity of SOD and CAT in Liver and Pancreas of both normal and T2DM rats.	24
8.	Effect of metformin on body weight, fasting blood glucose and insulin level, HOMA-IR and HOMA-B indices of normal and T2DM rats.	50
9.	Effect of metformin on the level of CORT of normal and T2DM rats.	50
10.	Effect of metformin on Na <sup>+</sup> -K <sup>+</sup> -ATPase and Mg <sup>2+</sup> -ATPase activity in HIP, HYP, PFC and AMY of both normal and T2DM rats.	50
11.	Effect of metformin on activity of mitochondrial complex-I, II, IV and V, and the level of MMP in HIP, HYP, PFC and AMY of both normal and T2DM rats.	51
12.	Effect of metformin on mitochondrial levels of NO and LPO, and activity of SOD and CAT in HIP, HYP, PFC and AMY of both normal and T2DM rats.	52
13.	Effect of metformin on the plasma glucose level of T2DM-induced encephalopathic rats in OGTT.	83
14.	Effect of metformin on the plasma glucose level of T2DM-induced encephalopathic rats in ITT.	83
15.	Effect of metformin on body weight, fasting blood glucose and insulin level, HOMA-IR and HOMA-B indices of normal and T2DM rats.	83
16.	Effect of metformin on the levels of TC, TG, HDL, LDL and CORT in T2DM-induced encephalopathic rats.	84
17.	Effect of metformin on mitochondrial complex-I, II, IV, V and MMP in HIP, HYP, PFC and AMY of T2DM-induced encephalopathic rats.	84
18.	Effect of metformin on mitochondrial level of NO and LPO, and activity of SOD and CAT in HIP, HYP, PFC and AMY of T2DM-induced encephalopathic rats.	85
19.	Effect of Bicuculline-sensitive GABA <sub>A</sub> receptor activation on the plasma glucose level of T2DM rats in OGTT.	108
20.	Effect of Bicuculline-sensitive GABA <sub>A</sub> receptor activation on the plasma glucose level of T2DM rats in ITT.	108

<b>21.</b>	Effect of muscimol fasting blood glucose and insulin level, HOMA-IR and HOMA-B indices in T2DM rats.	<b>109</b>
<b>22.</b>	Effect of metformin on bicuculline-sensitive GABA <sub>A</sub> receptor mediated alterations in plasma glucose level of T2DM rats in OGTT.	<b>127</b>
<b>23.</b>	Effect of metformin on bicuculline-sensitive GABA <sub>A</sub> receptor mediated changes in the plasma glucose level of T2DM rats in ITT.	<b>127</b>
<b>24.</b>	Effect of metformin on bicuculline-sensitive GABA <sub>A</sub> mediated alterations in the fasting blood glucose and insulin level, HOMA-IR and HOMA-B indices of T2DM rats.	<b>128</b>
<b>25.</b>	Effect of mSRS on mitochondrial bioenergetics in HIP, HYP, PFC and AMY of rats.	<b>159</b>
<b>26.</b>	Effect of mSRS on mitochondrial function and integrity in HIP, HYP, PFC and AMY of rats.	<b>159</b>
<b>27.</b>	Effect of mSRS on mitochondrial oxidative stress parameters in HIP, HYP, PFC and AMY of rats.	<b>160</b>
<b>28.</b>	Effect of SER (0.1, 1.0 and 10.0 mg/kg) on the SRS-induced increase in the plasma glucose level of rats in OGTT.	<b>184</b>
<b>29.</b>	Effect of SER (0.1, 1.0 and 10.0 mg/kg) on the SRS-induced increase in the plasma glucose level of rats in ITT.	<b>184</b>
<b>30.</b>	Effect of SER (0.1, 1.0 and 10.0 mg/kg) on the SRS-induced changes in fasting blood glucose and insulin level, HOMA-IR and HOMA-B indices of rats.	<b>185</b>
<b>31.</b>	Effect of SER (0.1, 1.0 and 10.0 mg/kg) on the SRS-induced alterations in the level of 5-HT, 5-HIAA and the ratio of 5-HIAA/5-HT in discrete brain regions.	<b>186</b>
<b>32.</b>	Effect of SER (0.1, 1.0 and 10.0 mg/kg) on the SRS-induced alterations in the activity of mitochondrial complex-I, II, IV and V, and MMP in discrete brain regions.	<b>187</b>
<b>33.</b>	Effect of SER (0.1, 1.0 and 10.0 mg/kg) on the SRS-induced alterations in the level of mitochondrial LPO and NO, and activity of mitochondrial SOD and catalase in discrete brain regions.	<b>188</b>
<b>34.</b>	Effect of metformin, diazepam or their combination on plasma glucose level during OGTT in co-occurring T2DM and RS exposed rats.	<b>217</b>
<b>35.</b>	Effect of metformin, diazepam or their combination on plasma glucose level during ITT in co-occurring T2DM and RS exposed rats.	<b>217</b>
<b>36.</b>	Effect of metformin, diazepam or their combination on plasma glucose, triglyceride and corticosterone levels in co-occurring T2DM and RS exposed rats.	<b>218</b>
<b>37.</b>	Effect of MET, SER and their combination on the DMP-induced increase in the plasma glucose level of rats in OGTT.	<b>249</b>
<b>38.</b>	Effect of MET, SER and their combination on the DMP-induced increase in the plasma glucose level of rats in ITT.	<b>249</b>
<b>39.</b>	Effect of MET, SER and their combination on the DMP-induced changes in fasting blood glucose and insulin level, HOMA-IR and HOMA-B indices of rats.	<b>249</b>