|  |
| --- |
| **MicroRNAs that facilitates Hepatitis C virus infection**  |
| **microRNA** | **Expression 1** | **Target genes** | **Function [reference]** |
| miR-122 | Up | 5’ UTR in HCV genomeXrn1 Cyclin G1SOCS3 | Promote HCV replication [16-18] and IRES mediated HCV translation [ 21]Inhibit 5’decay of HCV RNA [22]Promote Alcohol induced viral replication [27]Enhance methylation at SOCS3 gene promoter, inhibits IFN-induced ISRE activity [41] |
| miR-130a | Up | IFITM1 | Inhibits type 1 IFN signaling pathway and promotes HCV replication [33] |
| miR-141 | Up | DLC-1  | Promote viral replication [40] |
| miR-21 | Up | MyD88 and IRAK1 | Negatively regulate IFN signaling [42] |
|  |
| **MicroRNAs that suppresses Hepatitis C virus infection** |
| **microRNA** | **Expression 1** | **Target genes** | **Function [reference]** |
| miR-448 | Unknown | Core region in HCV genome  | Inhibits viral replication [28] |
| miR-196/196a | Unknown | NS5A region in HCV genomeBach1 | Inhibits viral replication [28]Inhibits HCV RNA and NS5A protein expression, relieve oxidative stress by upregulating HMOX1 gene expression [31] |
| let-7b | Unknown | NS5B and 5’UTR regions in HCV genome | Reduces HCV infectivity [29] |
| miR-199a | Unknown | 5’UTR in HCV genome | Inhibits viral replication [30] |
| miR-27a | Up | RXRα and ABCA1 | Regulates lipid metabolism, decrease viral infectivity [38] |
|  |
| **MicroRNAs that promote inflammation and fibrosis upon Hepatitis C virus infection** |
| **microRNA** | **Expression 1** | **Target genes** | **Function [reference]** |
| miR-449a | Down | NOTCH1 | Regulates YKL40 promoter activity and promotes inflammation [47] |
| miR-21 | Up | SMAD7 | Increase TGF-β signaling and promote fibrosis [50] |
| miR-29 | Down | COL1A1,COL3A1 | Potentiate fibrosis by activating hepatic stellate cells [32] |
| miR-155 | Up | APC | Promote cell proliferation by activating Wnt/β-Catenin signaling pathway [48] |

**Table 1**: **Altered expression of microRNAs in association with HCV infection and liver disease progression**

1Denotes endogenous expression in HCV infected liver biopsy patients or HCV infected hepatocytes.